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Water-Supply Paper 817

WATER LEVELS AND ARTESIAN PRESSURE
IN OBSERVATION WELLS IN THE
UNITED STATES IN 1936

WITH STATEMENTS
CONCERNING PREVIOUS WORK AND RESULTS

Prepared under the direction of
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INTRODUCTION

The rock formations of the earth are great natural underground reservoirs in which a part of the water derived from rain and snow is stored to supply the wells and springs and to maintain the flow of the streams during periods of fair weather. The water levels in wells register the stages of these natural reservoirs; they show to what extent the water supplies are depleted by drought or by heavy pumping for public waterworks, irrigation, or industrial uses and to what extent they are replenished in seasons of abundant rainfall. The pressures recorded on flowing wells also indicate the extent of depletion or replenishment of the artesian reservoirs.

The present report is the second of an annual series on ground-water levels and artesian pressure, the first of which was published as Water-Supply Paper 777. This series of reports will in a sense be an inventory, year by year, of the water supplies of the parts of the country which it covers. The present report gives records of water levels or artesian pressure in observation wells in 28 States and the Territory of Hawaii that were obtained by the United States Geological Survey and cooperating Federal, State, Territorial, county, and local agencies. The complete records of water levels for several projects are given in this report, including those for years prior to 1936. Nearly all the periodic measurements made by the Geological Survey and cooperating parties in Nebraska, Pennsylvania, and Utah, and in eight areas of the Soil Conservation Service are given in this volume. Complete records for selected wells in other States are also included. If complete descriptions of the wells are given in Water-Supply Paper 777, the well numbers only or these numbers and brief identifying descriptions are given in this report.

In most States for which records are given in this report the observation wells are not systematically distributed in accordance with a State-wide program but are the wells used in specific investigations of certain areas, largely areas of heavy pumping. In Indiana, Nebraska, Pennsylvania, and Utah systematic State-wide programs are being carried on, but even parts of these States contain very few observation wells.

It is planned that as opportunity is afforded and cooperation is obtained, the project will be developed into a systematic Nation-wide program that will provide reliable and continuing basic data on the ground-water levels and artesian pressures of all the principal water-bearing formations.

The water levels in this report are given with reference to datum planes of different kinds. Some are given in depths below the measuring point -- that is, below the recognized reference mark, at or near the top of the well, from which the depth to the water level in the well is usually measured; some are given in height above mean sea level; and some are given in height above an assumed datum plane. On some of the observation wells the measuring points were changed in 1936, and therefore the records are not directly comparable with those in Water-Supply Paper 777, but such changes are recorded in this report. Water levels given in heights above sea level or above assumed datum planes generally are comparable with those given in Water-Supply Paper 777.

Acknowledgments for effective services in the preparation of this report are due to S. W. Lohman, the secretary of the Committee on Observation Wells; to Miss Elizabeth M. Hill, Miss Martha M. Ricker, and Miss Jane Daniel, who typed the offset copy; and to Bernard H. Lane and A. W. Harkness, who edited the report.

ARKANSAS

GRAND PRAIRIE REGION

By David G. Thompson

Measurements of the depth to water level in wells in the Grand Prairie region, comprising Arkansas County and parts of Lonoke and Prairie Counties, Ark., were continued in 1936 by the United States Geological Survey in cooperation with the Arkansas Agricultural Experiment Station. It had been necessary to discontinue formal financial cooperation during the greater part of the economic depression, but such cooperation was resumed on a small scale in 1936. In accordance with the cooperative arrangement, the measurements of water level were made by employees of the Arkansas Agricultural Experiment Station, under the general direction of Prof. Deane G. Carter and the immediate direction of G. H. Banks.

In 1936 some expansion of the well-measurement program was undertaken. In the spring, between March 3 and May 5, 238 wells were measured, of which 120 were wells that had been measured under the regular program in earlier years and 118 were new wells. A somewhat smaller number of wells were measured once in September. An automatic water-stage recorder was maintained on one well throughout the year. There is now available an automatic record for this well for about $8\frac{1}{2}$ years. Because of limitations of finances and personnel it was necessary to make many of the spring measurements on dates considerably different from those used in the spring of 1935. Accordingly, these measurements cannot be strictly compared with those of the previous year.

The significant facts in regard to the geologic and hydrologic conditions in the Grand Prairie region were described briefly in Water-Supply Paper 777. It is desirable here to mention only certain facts.

In most wells that have been measured, particularly those in the central part of the region, the water level has dropped to successively lower levels nearly every year. The measurements in the spring of 1936 showed that this downward trend had continued in many wells during the pumping season of 1935. Unfortunately, funds were not available for measurements in the fall of 1935, and therefore there is no basis for comparison with the measurements in the fall of 1936 in the region as a whole. However, in well 280, the only well equipped with a recorder, the water dropped, in August 1936, to a level about 1.20 feet lower than the

lowest level reached in 1935; and on May 1, 1937, the water level was about 1.50 feet lower than on May 4, 1936.

It is desirable to emphasize the fact that the water levels in all observation wells in the Grand Prairie region show fluctuations of more than 1 foot within a few days and as much as 0.80 foot in 24 hours, these fluctuations being caused by fluctuations of atmospheric pressure. The water level tends to go down when the atmospheric pressure increases and to rise when the atmospheric pressure decreases. The greatest differences are due to the passage of areas of high and low pressure--that is, conditions that produce fair and stormy weather respectively. In order to make accurate comparison of the water level on corresponding days in different years it is necessary to correct for the atmospheric fluctuations by comparison with a barograph record at some meteorologic station, the nearest of which is the United States Weather Bureau station at Little Rock. For this purpose the record of well 280 here reported gives the time of observation.

There are given below the records for well 280, on which a recorder has been maintained, and for 15 other wells that were measured once or twice during 1936 and the earlier records of which were published in Water-Supply Paper 777. Two of the wells (Nos. 51A and 173) for which 1935 records are given in Water-Supply Paper 777, were not measured in 1936. The well numbers used in the tabulation below are the same as those used in that publication. All records give the depth to water level, in feet, below the measuring points described in Water-Supply Paper 777.

Water levels in wells in the Grand Prairie region, Arkansas

(Water levels are given in feet below measuring points described in Water-Supply Paper 777, pages 8-17)

280. Fred Hedrick. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 3, T. 3 S., R. 5 W. This well is equipped with an automatic water-stage recorder. In Water-Supply Paper 777 monthly measurements of this well from July 20, 1928, to December 29, 1935, were given. For the year 1936 the depths to water whenever the recorder charts were changed, usually at weekly intervals, are given below. In Water-Supply Paper 777 the measuring point was given as top of pit, level with land surface. On February 27, 1937, the observer sent in a note stating that for the last 2 years or more, measurements had been made from the top edge of a 2- by 4-inch board, 0.30 foot above the top of the well pit, which was the original measuring point. On the date just indicated the use of the original measuring point was resumed. No information in regard to this change had been noted previously and it has not been possible to determine just when the change was made. Because of the inability to determine just when the change was made the measurements have not been corrected accordingly. When using the record for comparing the depth to water on corresponding dates in different years it must be remembered that the depths given for 2 years or more prior to February 27, 1937, may be 0.30 foot too great. The highest water level in this well during 1936 was 86.1 feet on April 15. This high level apparently was reached during a period of unusual low pressure, and the normal level

Water levels in wells in the Grand Prairie region,

Arkansas--Continued

was probably 0.30 to 0.50 foot lower. The lowest level during the year was about 93.65 feet on August 21. In comparison, the highest level in 1935 was about 85.10 feet on April 6; and the lowest level was 92.46 feet on August 30.

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
Jan. 4, 1936	.....	86.73	July 6, 1936	9:45 a.m.	b 89.97
8	2:35 p.m.	87.01	11	5:10 p.m.	92.10
11	4:00 p.m.	86.89	18	1:30 p.m.	92.92
19	4:15 p.m.	87.13	25	4:00 p.m.	92.78
25	2:30 p.m.	87.08	Aug. 1	10:35 a.m.	93.02
Feb. 1	1:40 p.m.	87.02	8	10:45 a.m.	93.53
10	5:50 p.m.	87.00	14	5:00 p.m.	93.07
15	2:45 p.m.	86.71	22	10:15 a.m.	b 91.00
22	2:15 p.m.	86.94	28	10:15 a.m.	93.29
Mar. 3	8:45 a.m.	86.53	Sept. 4	11:30 a.m.	93.46
7	3:50 p.m.	86.65	12	3:10 p.m.	c 89.59
15	4:40 p.m.	86.37	19	10:45 a.m.	89.39
23	3:35 p.m.	86.29	26	9:30 a.m.	89.01
31	11:30 a.m.	86.66	Oct. 3	9:30 a.m.	89.11
Apr. 4	1:45 p.m.	86.63	10	9:05 a.m.	88.60
11	5:10 p.m.	86.55	17	7:40 a.m.	88.45
20	11:45 a.m.	86.60	24	9:00 a.m.	88.78
27	10:20 a.m.	86.40	31	8:00 a.m.	88.40
May 2	12:00 a.m.	86.46	Nov. 7	11:45 a.m.	88.39
9	10:45 a.m.	86.42	14	8:45 a.m.	88.19
16	5:10 p.m.	86.51	21	8:15 a.m.	88.02
23	12:00 noon	a 87.95	28	9:40 a.m.	88.20
June 1	7:30 a.m.	90.99	Dec. 7	10:35 a.m.	88.22
6	4:40 p.m.	91.85	12	1:40 p.m.	88.25
13	11:30 a.m.	91.99	20	10:30 a.m.	88.15
20	10:45 a.m.	91.89	28	10:25 a.m.	87.89
27	2:50 p.m.	92.93			

a Pumping of a nearby well that affects the water level in the observation well began for the season on May 19.

b Nearby well not pumping at time of measurement. Unless otherwise indicated this nearby well was being pumped at times of all measurements during the pumping season.

c Pumping for the season in nearby well stopped on September 8.

Well no.	Date (1936)	Depth to water level (feet)	Well no.	Date (1936)	Depth to water level (feet)
10	Apr. 27	51.06	261	Mar. 18	64.40
55	Mar. 11	64.67		Sept. 16	65.69
	Sept. 9	76.45	318	Apr. 22	84.26
116	Apr. 20	70.64		Sept. 15	88.39
126	Apr. 20	36.63	392	Apr. 22	80.36
135	Apr. 16	43.02		Sept. 22	83.19
	Sept. 15	43.55	456	Mar. 14	81.39
144	Apr. 14	90.22	499	Mar. 13	38.24
159	Apr. 14	57.81	501	Mar. 13	28.68
205	Apr. 14	90.91		Sept. 24	32.24
	Sept. 4	96.23	507	Mar. 13	37.81
				Sept. 29	43.63

CALIFORNIA

GENERAL SUMMARY

By F. C. Ebert

During 1936 the United States Geological Survey maintained a water-stage recorder on well 42a, at Baldwin Park, in the upper San Gabriel Valley, and made at least two measurements of the depths to water level in 19 of its observation wells in the upper San Bernardino Basin. Measurements of depths to water level were made twice during the year in 90 observation wells in the Mojave River Valley, in 18 wells in the Antelope Valley, and in 10 wells in the San Jacinto area. Other observation wells in the south coastal basins were not visited, because measurements were made at frequent intervals by other public agencies.

The California Water & Telephone Co., San Diego Bay division, Coronado district, a permittee of the State Division of Water Rights, measured in 1936 the depths to water level in 19 wells in San Diego County. The Department of Public Works, Division of Water Resources, collected from various interested parties records of water level in 2,400 wells in the south coastal basins and will publish the records of about one-third of them in its annual report. During the year the Department published its annual report, Bulletin 39d, which contains hydrologic data collected during 1935. The Los Angeles Department of Water and Power made monthly measurements in 40 wells in Bouquet Canyon in 1936 and the Water Department of the City of Santa Barbara made monthly measurements of depths to water level in representative wells in the Santa Ynez River Basin, Santa Barbara County. Regular measurements were continued in representative wells in Ventura County by the Ventura County Water Survey. The Midlands County Gas & Electric Co. made measurements in 16 wells in Santa Maria Valley during August 1936. Yearly measurements have been made in these wells since 1929. The county surveyor made spring and fall measurements in about 170 wells in the Salinas Valley, which constitute a continuation of the observations begun by the State engineer in 1932. About 200 wells in the Santa Clara Valley were measured about twice a month by the Santa Clara Valley Water Conservation District and about 200 wells in the Sacramento Valley were measured during the fall by the State engineer. The State engineer in 1936 also measured the depths to water level in 180 wells in Madera

County, 500 wells in Fresno County, 400 wells in Kings County, 1,200 wells in Tulare County, and 340 wells in Kern County. The Los Angeles Department of Water and Power maintained water-stage recorders on 46 wells in the Owens Valley and measured the depths to water level in 177 deep wells and 60 test holes twice monthly. Three wells in Haiwee Valley were measured weekly, and four other wells were measured monthly. Nineteen wells in the Mono Basin were measured monthly.

Graphs showing fluctuations of water level in four typical wells in southern California--the Williams well, in San Bernardino Valley; well 41, near Anaheim, in the coastal plain of southern California; well 42, at Baldwin Park, in the foothill belt between Los Angeles and San Bernardino; and well 72, at Perris, in San Jacinto Valley--were published in Water-Supply Paper 468, in 1921. Measurements of water level made in these wells, or in comparable companion wells, since 1920 are given in the following pages.

Water levels in typical wells in Southern California

41. Described as the J. B. Neff well in Water-Supply Paper 468. South of Anaheim, 682 feet west of Palm Street, 100 feet south of Cerritos Ave. Measuring point, top of curb, 50.3 feet above top of casing, 0.5 foot above land surface and about 136 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 15, 1921	63.0	Oct. 1, 1924	48.0	Mar. 1, 1926	98.5
Mar. 28	60.2	Dec. 1	54.0	May 1	102.0
Nov. 7	71.0	May 1, 1925	69.0	Sept. 1	106.0
Jan. 1922	69.0	Aug. 1	77.5	Dec. 1	103.0
Mar.	62.0	Dec. 1	89.5		Destroyed

41a. Numbered C-1128a-N-16 in Bull. 39, California Division of Water Resources. 200 feet east of State Highway (U.S. 101), 100 feet south of Katella Ave., west of Orange. Measuring point, top of 1½-inch pipe near casing, 0.5 foot above land surface and 140.1 feet above mean sea level. Replaces well 41.

May 30, 1929	92.5	Sept. 30, 1931	117.2	Mar. 9, 1934	119.9
July 30	92.5	Oct. 31	116.8	May 22	123.8
Sept. 30	98.0	Nov. 30	117.8	July 9	126.0
Nov. 15	109.5	Dec. 31	115.9	Aug. 30	127.3
Nov. 30	102.0	Jan. 31, 1932	112.3	Dec. 11	125.3
Dec. 30	113.0	Feb. 29	112.1	Feb. 26, 1935	122.6
Jan. 18, 1930	101.5	Apr. 23	114.4	Mar. 15	121.8
Feb. 17	107.2	Aug. 15	119.3	Apr. 19	120.9
Mar. 17	100.0	Sept. 16	119.9	June 20	123.8
May 30	105.7	Oct. 20	120.6	Aug. 16	126.4
June 25	104.1	Dec. 19	118.9	Oct. 3	128.2
July 21	110.6	Jan. 13, 1933	118.7	Mar. 13, 1936	128.1
July 30	107.3	Feb. 24	116.3	Apr. 14	124.6
Aug. 30	112.0	Mar. 13	117.2	May 12	127.0
Oct. 30	109.8	20	117.0	June 15	128.1
Dec. 30	108.4	July 14	121.5	July 14	129.8
Feb. 28, 1931	108.7	Aug. 3	123.9	Aug. 21	132.0
Apr. 30	109.9	Sept. 8	123.5	Sept. 23	133.1
June 30	110.4	Oct. 23	124.0	Nov. 18	133.7
July 31	115.5	Dec. 14	124.0	Dec. 3	133.4

Water levels in typical wells in southern California--Continued

42. Numbered 87 in Water-Supply Paper 219, C-294-g-15 in Bull. 39, California Division of Water Resources. 20 feet south of Los Angeles Street, 600 feet west of Main Street, Baldwin Park, Calif. Diameter 7 inches, depth 140 feet. Measuring point, through July 7, 1928, top of casing, 4.1 feet above land surface and 386.5 feet above mean sea level; through Sept. 5, 1931, top of concrete curb over well, 0.9 foot above land surface and 383.3 feet above mean sea level; since Sept. 5, 1931, top of platform over well, 1.4 feet above land surface and 383.8 feet above mean sea level. Water levels in following table expressed in feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 25, 1903	288.4	Apr. 10, 1922	321.1	May 17, 1927	295.7
Dec. 14, 1904	282.4	May 25	321.3	June 1	294.8
Jan. 12, 1905	282.0	June 27	317.7	20	293.9
Feb. 21	283.6	July 25	315.4	Sept. 12	287.3
Mar. 10	287.7	Sept. 14	310.9	27	286.3
Apr. 15	292.6	Oct. 9	310.1	Oct. 17	285.6
May 17	295.8	Mar. 8, 1923	310.9	Nov. 2	285.3
June 22	295.6	May 22	308.3	Dec. 2	284.8
July 21	295.2	Oct. 9	299.7	Jan. 7, 1928	284.7
Aug. 16	294.3	Nov. 6	298.3	10	285.0
Sept. 20	292.8	Dec. 17	296.6	Feb. 9	284.3
Nov. 12	290.8	Jan. 30, 1924	296.6	11	285.0
Dec. 21	289.9	Mar. 6	294.7	Mar. 5	284.9
Jan. 27, 1906	289.5	20	297.3	9	285.5
Mar. 15	291.2	21	294.1	15	285.6
May 8	303.2	Apr. 9	293.9	Apr. 3	285.7
June 7	305.5	May 22	293.3	16	286.0
Aug. 1	303.6	June 23	291.1	30	285.8
Sept. 25	300.6	July 19	288.4	May 7	285.5
Dec. 11	297.7	24	288.3	15	285.0
Feb. 12, 1907	307.7	Sept. 24	286.2	23	284.6
May 16	322.5	Oct. 8	285.9	31	284.1
Aug. 26	316.5	Nov. 12	285.9	June 15	283.1
Dec. 30	310.1	Dec. 17	286.0	July 2	281.4
Apr. 21, 1908	314.2	Mar. 28, 1925	283.8	16	280.5
June 23	311.7	Apr. 25	283.5	Aug. 1	279.1
Oct. 14	305.5	Aug. 26	276.8	7	278.7
Dec. 27	303.4	Nov. 7	276.5	23	277.2
Apr. 5, 1909	316.4	11	276.3	Sept. 1	276.3
July 10	319.3	Dec. 22	276.3	8	275.8
Oct. 13	312.9	Jan. 25, 1926	275.3	21	275.3
Feb. 2, 1910	316.3	Feb. 13	275.7	Oct. 2	274.7
Aug. 9	310.9	Mar. 9	276.3	5	274.9
Jan. 4, 1911	304.4	Apr. 10	275.3	Nov. 13	274.5
May 24, 1912	308.9	13	275.5	Dec. 4	275.0
July 26	311.7	22	277.3	Jan. 5	275.2
Oct. 22	301.8	26	278.3	Feb. 8, 1929	275.4
Oct. 17, 1913	297.8	May 3	280.3	Mar. 8	275.2
Apr. 5, 1914	325.6	18	282.8	Apr. 25	276.6
June 2	326.7	June 8	283.8	May 4	277.2
Sept. 3	320.0	15	283.8	June 4	276.7
Nov. 17	314.5	26	282.9	July 3	275.2
May 13, 1915	324.6	July 16	282.3	Aug. 1	272.9
Oct. 11	314.0	Aug. 12	280.0	Sept. 23	269.7
May 19, 1916	329.1	Sept. 7	277.3	Oct. 8	269.3
Nov. 17	317.9	Nov. 23	275.6	Nov. 21	268.3
May 26, 1917	320.3	Jan. 6, 1927	277.3	Dec. 30	267.7
Nov. 21	313.8	Feb. 7	277.7	Jan. 9, 1930	267.9
May 11, 1918	321.1	19	278.1	Feb. 7	268.2
Oct. 5	313.5	24	279.1	Mar. 7	268.5
May 14, 1919	310.1	Mar. 2	280.5	Apr. 4	269.5
Nov. 10	299.2	5	282.2	May 2	270.7
May 13, 1920	303.2	12	284.8	June 6	272.5
Nov. 23	294.1	17	286.4	July 14	271.0
May 27, 1921	296.3	25	288.6	Sept. 5	266.1
July 23	296.4	Apr. 4	291.0	Oct. 11	264.6
Sept. 16	293.0	11	292.1	Nov. 15	263.6
Oct. 21	292.4	21	293.5	Dec. 6	263.9
Mar. 9, 1922	319.4	May 4	294.3	Jan. 3, 1931	264.1

Water levels in typical wells in southern California--Continued

42. Numbered 87 in Water-Supply Paper 219, C-294-g-15 in Bull. 39, California Division of Water Resources.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 7, 1931	264.7	Mar. 15, 1932	270.8	Mar. 14, 1933	269.8
Mar. 7	265.4	Apr. 26	276.7	28	270.2
Apr. 4	264.7	May 10	277.3	Apr. 25	270.6
25	263.5	June 7	276.7	May 16	270.8
May 30	264.6	July 5	275.6	30	270.4
July 4	262.7	Aug. 3	273.7	June 13	269.8
Aug. 1	260.7	Sept. 7	270.8	July 4	268.1
Sept. 5	258.3	Oct. 5	269.5	31	265.8
Oct. 3	258.1	Nov. 6	268.2	Sept. 18	262.2
Nov. 14	257.3	Dec. 10	266.9	Oct. 5	261.5
Dec. 5	257.0	31	267.3	26	260.7
Jan. 5, 1932	259.1	Jan. 3, 1933	267.4	Dec. 7	259.8
Feb. 9	260.8	31	267.9	21	260.1
23	264.1	Feb. 28	269.2		

42a. 400 feet west of Main Street, 375 feet north of Los Angeles Street, Baldwin Park, Calif.; 200 feet east and 400 feet north of well 42. Diameter 16 inches, depth 200 feet. Measuring point, top of casing, 0.7 foot above land surface and 387.8 feet above mean sea level. Water levels in following table expressed in feet above mean sea level minus 200.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1932												
1	.....	.....	.....	.....	.....	.....	75.95	74.02	71.20	69.68	68.43	67.19
2	.....	.....	.....	.....	.....	.....	75.91	73.86	71.17	69.63	68.38	67.16
3	.....	.....	.....	.....	.....	.....	75.85	73.72	71.12	69.60	68.35	67.14
4	.....	.....	.....	.....	.....	.....	75.84	73.67	71.08	69.54	68.27	67.11
5	.....	.....	.....	.....	.....	.....	75.79	73.59	71.03	69.52	68.20	67.06
6	.....	.....	.....	.....	.....	.....	75.71	73.55	70.95	69.50	68.19	67.00
7	.....	.....	.....	.....	.....	.....	75.64	73.36	70.90	69.46	68.12	66.97
8	.....	.....	.....	.....	.....	.....	75.61	73.20	70.85	69.42	68.08	66.95
9	.....	.....	.....	.....	.....	.....	75.59	73.15	70.76	69.38	68.07	66.92
10	.....	.....	.....	.....	.....	.....	75.53	73.06	70.64	69.38	68.00	66.90
11	.....	.....	.....	.....	.....	.....	75.50	73.01	70.57	69.38	67.92	66.95
12	.....	.....	.....	.....	.....	.....	75.46	72.85	70.52	69.33	67.88	67.03
13	.....	.....	.....	.....	.....	.....	75.40	72.79	70.44	69.30	67.85	67.06
14	.....	.....	.....	.....	.....	.....	75.35	72.70	70.41	69.26	67.78	67.04
15	.....	.....	.....	.....	.....	.....	75.29	72.61	70.35	69.27	67.73	67.00
16	.....	.....	.....	.....	.....	.....	75.25	72.49	70.30	69.23	67.69	67.02
17	.....	.....	.....	.....	.....	.....	75.21	72.40	70.31	69.21	67.64	67.10
18	.....	.....	.....	.....	.....	.....	76.52	75.21	72.32	70.28	69.15	67.60
19	.....	.....	.....	.....	.....	.....	76.53	75.11	72.32	70.28	69.15	67.60
20	.....	.....	.....	.....	.....	.....	76.57	75.04	72.23	70.24	69.10	67.57
21	.....	.....	.....	.....	.....	.....	76.50	74.96	72.13	70.20	69.06	67.52
22	.....	.....	.....	.....	.....	.....	76.40	74.87	72.03	70.12	68.97	67.45
23	.....	.....	.....	.....	.....	.....	76.36	74.78	71.94	70.02	68.88	67.41
24	.....	.....	.....	.....	.....	.....	76.31	74.72	71.85	69.94	68.87	67.37
25	.....	.....	.....	.....	.....	.....	76.30	74.66	71.73	69.96	68.79	67.37
26	.....	.....	.....	.....	.....	.....	76.27	74.62	71.63	69.95	68.74	67.35
27	.....	.....	.....	.....	.....	.....	76.24	74.56	71.53	69.88	68.72	67.32
28	.....	.....	.....	.....	.....	.....	76.22	74.52	71.47	69.84	68.70	67.29
29	.....	.....	.....	.....	.....	.....	76.15	74.45	71.44	69.82	68.65	67.29
30	.....	.....	.....	.....	.....	.....	76.08	74.33	71.37	69.79	68.60	67.28
31	.....	.....	.....	.....	.....	.....	76.01	74.30	71.28	69.72	68.53	67.25
1933							.....	74.12	71.23	.....	68.47	.....
1	67.38	68.00	69.29	70.43	70.83	70.40	68.45	65.84	63.01	61.75	60.65	59.87
2	67.40	68.05	69.34	70.46	70.88	70.39	68.34	65.74	62.94	61.74	60.67	59.90
3	67.41	68.09	69.39	70.53	70.89	70.36	68.25	65.65	62.90	61.73	60.70	59.90
4	67.40	68.14	69.44	70.57	70.91	70.32	68.20	65.56	62.86	61.67	60.70	59.87
5	67.42	68.21	69.47	70.56	70.84	70.28	68.14	65.50	62.78	61.57	60.67	59.81
6	67.44	68.27	69.52	70.58	70.78	70.24	68.05	65.44	62.71	61.47	60.65	59.83
7	67.44	68.27	69.57	70.62	70.83	70.22	67.95	65.33	62.62	61.43	60.61	59.83

Water levels in typical wells in southern California--continued

42a. Baldwin Park, Calif.--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1933												
8	67.46	68.33	69.60	70.51	70.87	70.16	67.84	65.26	62.55	61.41	60.58	59.82
9	67.48	68.38	69.64	70.70	70.86	70.10	67.76	65.16	62.48	61.36	60.57	59.79
10	67.50	68.40	69.68	70.71	70.86	70.04	67.71	65.06	62.46	61.29	60.57	59.80
11	67.45	68.47	69.69	70.74	70.85	70.02	67.64	64.94	62.41	61.24	60.54	59.78
12	67.47	68.53	69.73	70.76	70.85	69.97	67.54	64.82	62.36	61.21	60.52	59.79
13	67.48	68.57	69.74	70.72	70.84	69.90	67.47	64.73	62.32	61.18	60.52	59.84
14	67.52	68.58	69.78	70.68	70.89	69.85	67.35	64.59	62.28	61.15	60.52	59.86
15	67.53	68.64	69.81	70.71	70.90	69.78	67.28	64.46	62.23	61.14	60.46	59.90
16	67.57	68.72	69.83	70.76	70.88	69.74	67.21	64.36	62.22	61.12	60.41	59.95
17	67.55	68.77	69.89	70.78	70.84	69.64	67.13	64.24	62.19	61.09	60.36	59.99
18	67.50	68.80	69.93	70.77	70.85	69.57	67.05	64.12	62.18	61.03	60.34	60.04
19	67.58	68.83	69.96	70.73	70.83	69.48	66.93	63.99	62.13	60.96	60.33	60.08
20	67.58	68.88	70.02	70.69	70.80	69.38	66.85	63.90	62.10	60.91	60.28	60.12
21	67.56	68.93	70.05	70.70	70.77	69.28	66.76	63.82	62.04	60.89	60.22	60.15
22	67.61	68.94	70.06	70.69	70.72	69.17	66.68	63.73	61.99	60.86	60.20	60.20
23	67.64	69.00	70.05	70.72	70.72	69.10	66.61	63.66	61.94	60.84	60.17	60.23
24	67.64	69.05	70.06	70.70	70.70	69.03	66.55	63.57	61.92	60.81	60.11	60.26
25	67.68	69.09	70.11	70.68	70.65	68.95	66.48	63.50	61.93	60.77	60.04	60.29
26	67.72	69.13	70.14	70.68	70.65	68.90	66.40	63.42	61.92	60.75	59.99	60.33
27	67.79	69.19	70.19	70.70	70.60	68.82	66.32	63.35	61.88	60.72	59.94	60.36
28	67.82	69.24	70.24	70.75	70.56	68.72	66.20	63.27	61.83	60.69	59.90	60.38
29	67.89	.....	70.30	70.77	70.54	68.64	66.08	63.20	61.81	60.67	59.86	60.42
30	67.92	.....	70.34	70.80	70.47	68.57	66.01	63.14	61.78	60.66	59.85	60.45
31	67.95	.....	70.39	.....	70.42	.....	65.93	63.08	.....	60.65	.....	60.47
1934												
1	60.52	64.21	66.04	66.97	67.48	66.00	64.71	62.03	59.69	58.25	58.40	59.43
2	60.55	64.32	66.10	67.02	67.52	65.98	64.67	61.95	59.64	58.18	58.45	59.44
3	60.61	64.40	66.14	67.01	67.52	65.94	64.58	61.83	59.57	58.11	58.49	59.48
4	60.66	64.49	66.18	67.01	67.47	65.93	64.53	61.78	59.50	58.04	58.54	59.52
5	60.73	64.59	66.22	67.03	67.47	65.92	64.47	61.72	59.44	57.98	58.57	59.53
6	60.81	64.69	66.27	67.06	67.47	65.89	64.38	61.61	59.36	57.93	58.61	59.55
7	60.89	64.78	66.30	67.07	67.44	65.87	64.31	61.48	59.31	57.89	58.65	59.57
8	61.00	64.87	66.34	67.11	67.36	65.87	64.25	61.37	59.22	57.86	58.67	59.60
9	61.12	64.97	66.38	67.13	67.30	65.86	64.20	61.28	59.18	57.84	58.70	59.64
10	61.24	65.02	66.40	67.14	67.25	65.84	64.15	61.20	59.10	57.80	58.73	59.66
11	61.35	65.09	66.43	67.16	67.19	65.83	64.04	61.08	59.04	57.76	58.77	59.69
12	61.48	65.16	66.46	67.21	67.15	65.80	63.90	60.98	59.02	57.71	58.81	59.73
13	61.61	65.22	66.48	67.28	67.10	65.74	63.77	60.90	.....	57.68	58.84	59.75
14	61.75	65.28	66.52	67.30	67.06	65.70	63.67	60.82	58.93	57.66	58.87	59.78
15	61.88	65.33	66.56	67.35	66.99	65.67	63.61	60.72	58.91	57.63	58.92	59.82
16	62.02	65.39	66.62	67.40	66.94	65.60	63.55	60.63	.....	57.60	58.95	59.84
17	62.18	65.44	66.63	67.45	66.89	65.55	63.45	60.52	58.87	57.61	58.99	59.88
18	62.32	65.50	66.65	67.47	66.82	65.51	63.36	60.42	58.79	57.65	59.03	59.90
19	62.47	65.55	66.67	67.44	66.76	65.44	63.24	60.33	58.71	57.71	59.07	59.95
20	62.62	65.60	66.72	67.45	66.73	65.38	63.11	60.29	58.64	57.77	59.10	59.97
21	62.75	65.64	66.71	67.47	66.68	65.32	63.02	60.26	58.58	57.83	59.12	60.01
22	62.90	65.69	66.73	67.51	66.59	65.27	62.98	60.19	58.55	57.88	59.16	60.05
23	63.06	65.76	66.79	67.51	66.53	65.21	62.89	.....	58.52	57.93	59.21	60.08
24	63.22	65.80	66.82	67.51	66.48	65.14	62.79	60.15	58.50	57.98	59.23	60.12
25	63.35	65.82	66.83	67.52	66.44	65.07	62.71	60.10	58.48	58.06	59.27	60.16
26	63.48	65.86	66.86	67.51	66.33	65.03	62.63	.....	58.47	58.11	59.30	60.21
27	63.62	65.91	66.87	67.48	66.25	64.97	62.53	60.00	58.42	58.14	59.32	60.25
28	63.76	65.97	66.88	67.48	66.18	64.89	62.37	59.96	58.39	58.19	59.34	60.30
29	63.88	.....	66.92	67.50	66.14	64.83	62.27	59.88	58.36	58.24	59.39	60.33
30	64.00	.....	66.92	67.47	66.10	64.77	62.21	59.81	58.32	58.30	59.40	60.39
31	64.10	.....	66.94	.....	66.04	.....	62.12	59.78	.....	58.36	.....	60.44
1935												
1	60.51	62.88	67.69	75.01	79.64	83.26	82.55	80.40	77.40	75.59	74.44	73.58
2	60.56	62.99	67.97	75.19	79.81	83.28	82.49	80.30	77.40	75.57	74.42	73.55
3	60.62	63.10	68.19	75.40	79.97	83.33	82.43	80.17	77.38	75.55	74.37	73.51
4	60.71	63.22	68.46	75.60	80.10	83.33	82.41	80.04	77.31	75.50	74.31	73.52
5	60.77	63.34	68.72	75.77	80.27	83.35	82.38	79.94	77.25	75.39	74.31	73.51
6	60.82	63.46	68.99	75.97	80.42	83.33	82.33	79.85	77.12	75.34	74.29	73.49
7	60.89	63.58	69.27	76.19	80.55	83.28	82.27	79.74	76.98	75.23	74.25	73.50
8	60.97	63.71	69.51	76.42	80.67	83.26	82.22	79.64	76.94	75.20	74.16	73.54
9	61.03	63.85	69.76	76.53	80.78	83.36	82.16	79.52	76.91	75.12	74.14	73.51
10	61.11	63.99	69.98	76.70	80.90	83.38	82.04	79.36	76.85	75.01	74.08	73.48
11	61.19	64.14	70.21	76.88	81.01	83.43	81.93	79.25	76.78	74.94	74.04	73.47

Water levels in typical wells in southern California--continued

42a. Baldwin Park, Calif.--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1935												
12	61.23	64.28	70.48	77.05	81.17	83.42	81.83	79.15	76.72	74.89	74.03	73.48
13	61.32	64.41	70.73	77.21	81.28	83.43	81.77	79.05	76.64	74.86	73.98	73.42
14	61.39	64.55	70.97	77.36	81.41	83.40	81.74	78.98	76.60	74.85	73.91	73.39
15	61.46	64.69	71.20	77.49	81.54	83.32	81.66	78.88	76.54	74.80	73.83	73.39
16	61.52	64.85	71.44	77.64	81.66	83.30	81.53	78.78	76.50	74.76	73.78	73.37
17	61.62	65.04	71.67	77.79	81.78	83.28	81.48	78.65	76.45	74.74	73.74	73.34
18	61.70	65.23	71.90	77.92	81.89	83.22	81.38	78.57	76.35	74.81	73.66	73.30
19	61.76	65.43	72.11	78.05	82.02	83.12	81.30	78.43	76.24	74.79	73.68	73.31
20	61.81	65.62	72.34	78.18	82.14	83.04	81.25	78.33	76.16	74.71	73.69	73.27
21	61.89	65.83	72.57	78.31	82.25	82.97	81.24	78.25	76.10	74.71	73.71	73.23
22	61.99	66.05	72.80	78.44	82.36	82.90	81.23	78.17	76.09	74.68	73.71	73.21
23	62.08	66.30	73.04	78.57	82.46	82.93	81.17	78.06	76.02	74.57	73.71	73.16
24	62.17	66.52	73.25	78.67	82.55	82.92	81.08	77.96	75.97	74.53	73.68	73.11
25	62.26	66.72	73.49	78.80	82.64	82.84	80.99	77.86	75.85	74.50	73.66	73.09
26	62.34	66.95	73.73	78.92	82.78	82.80	80.93	77.76	75.82	74.48	73.64	73.03
27	62.43	67.20	73.95	79.03	82.86	82.75	80.84	77.67	75.80	74.48	73.63	72.99
28	62.52	67.44	74.15	79.18	82.97	82.68	80.77	77.60	75.74	74.46	73.62	72.96
29	62.60	.....	74.37	79.34	83.07	82.59	80.72	77.56	75.69	74.39	73.64	72.96
30	62.69	.....	74.58	79.50	83.15	82.59	80.61	77.46	75.64	74.36	73.58	72.93
31	62.78	.....	74.80	.....	83.22	.....	80.50	77.43	.....	74.35	.....	72.92
1936												
1	72.89	72.26	72.62	74.01	76.92	77.97	76.11	73.18	70.14	.....	.....	.....
2	72.92	72.28	72.63	74.12	77.02	77.95	75.97	73.10	70.08	.....	.....	.....
3	72.96	72.25	72.64	74.23	77.10	77.90	75.89	73.02	69.97	.....	.....	.....
4	72.99	72.28	72.64	74.32	77.10	77.87	75.87	72.96	69.85	.....	.....	.....
5	72.98	72.27	72.63	74.38	77.14	77.86	75.80	72.87	69.72	.....	.....	.....
6	72.98	72.26	72.66	74.47	77.21	77.84	75.77	72.77	69.63	.....	.....	.....
7	72.92	72.27	72.69	74.58	77.25	77.81	75.69	72.65	69.58	.....	.....	.....
8	72.90	72.24	72.72	74.70	77.30	77.74	75.60	72.54	69.51	.....	.....	.....
9	72.89	72.23	72.77	74.79	77.36	77.74	75.51	72.48	69.43	.....	.....	.....
10	72.89	72.25	72.79	74.88	77.43	77.70	75.41	72.40	69.37	.....	.....	.....
11	72.87	72.30	72.80	74.97	77.50	77.57	75.34	72.29	69.32	.....	.....	.....
12	72.86	72.31	72.85	75.06	77.56	77.48	75.26	72.15	69.25	.....	.....	.....
13	72.87	72.30	72.87	75.14	77.64	77.41	75.21	72.01	69.17	.....	.....	.....
14	72.85	72.32	72.91	75.24	77.71	77.41	75.14	71.87	69.12	.....	.....	.....
15	72.84	72.33	72.94	75.33	77.77	77.33	75.02	71.73	69.07	.....	.....	.....
16	72.84	72.33	72.99	75.43	77.79	77.26	74.89	71.65	69.02	.....	.....	.....
17	72.82	72.33	73.00	75.54	77.85	77.23	74.80	71.57	68.93	.....	.....	.....
18	72.78	72.39	73.00	75.64	77.90	77.14	74.67	71.49	68.84	.....	.....	.....
19	72.78	72.39	73.03	75.75	77.95	77.10	74.52	71.35	68.76	.....	.....	.....
20	72.76	72.40	73.10	75.86	78.01	77.01	74.43	71.21	68.72	.....	.....	.....
21	72.72	72.42	73.21	75.97	78.04	76.92	74.35	71.09	68.68	.....	.....	.....
22	72.69	72.48	73.28	76.09	78.05	76.89	74.22	71.02	68.61	.....	.....	.....
23	72.65	72.50	73.32	76.16	78.04	76.83	74.09	70.94	68.56	.....	.....	.....
24	72.60	72.50	73.41	76.25	78.01	76.75	74.00	70.81	68.51	.....	.....	.....
25	72.56	72.48	73.46	76.36	78.07	76.68	73.91	70.71	68.48	.....	.....	.....
26	72.52	72.50	73.50	76.48	78.10	76.59	73.82	70.60	68.43	.....	.....	.....
27	72.48	72.54	73.58	76.57	78.09	76.47	73.74	70.53	68.37	.....	.....	.....
28	72.40	72.58	73.68	76.66	78.11	76.40	73.59	70.44	68.28	.....	.....	.....
29	72.34	72.58	73.77	76.74	78.10	76.30	73.46	70.34	68.23	.....	.....	.....
30	72.28	.....	73.89	76.83	78.05	76.21	73.37	70.29	68.17	.....	.....	.....
31	72.25	.....	73.94	.....	77.99	.....	73.28	70.22	.....	.....	.....	.....

Measurements on June 20-22, 1933, estimated.

Recorder not operating Aug. 23-30 and Sept. 12-20, 1934.

Measurements on August 24, 25, 1935, interpolated.

72. 300 feet southeast of well 72c. Measuring point, top of casing, 2.5 feet above land surface. Record from 1904 to 1920 published in Water-Supply Paper 468, pages 75-76.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Feb. 10, 1921	58.90	Aug. 2, 1922	61.75	Mar. 12, 1925	64.89
Apr. 23	62.1	Oct. 27	61.88	May 26	65.32
May 13	59.5	Feb. 26, 1923	61.85	Aug. 25	65.81
July 25	60.1	June 6	62.15	Nov. 3	66.05
Oct. 10	60.7	Sept. 17	62.45	May 13, 1926	66.86
Nov. 30	60.98	Dec. 6	62.75	Oct. 27	68.22
Apr. 7, 1922	61.44	Feb. 26, 1924	63.12	June 24, 1927	68.4
May 16	61.54	Aug. 26	63.93		

72c. Southeast corner of Fourth and F Streets, Perris. Measuring point, 1.48 higher than measuring point on well 72, or 3.98 feet above land surface. This well replaces well 72.

May 1, 1929	67.72	Mar. 8, 1932	70.27	Dec. 4, 1934	72.21
Sept. 7	67.40	May 3	70.43	Feb. 26, 1935	72.26
Mar. 4, 1930	67.90	Aug. 10	70.75	May 7	72.48
May 21	68.20	Nov. 18	70.96	Aug. 6	72.60
July 31	68.52	Feb. 6, 1933	71.12	Nov. 4	72.68
Dec. 4	68.88	May 18	71.44	Feb. 7, 1936	72.73
Mar. 4, 1931	69.12	Aug. 4	71.63	Aug. 12	72.87
June 12	70.12	Nov. 10	71.62	Nov. 5	72.03
Aug. 26	69.87	Feb. 6, 1934	71.63		

Williams well. 0.35 mile north of Palmetto Avenue, 75 feet west of Nevada Street, northwest of Redlands, 50 feet north of Santa Ana River, San Bernardino Valley, Calif. Diameter 10 inches, depth 110 feet. Measuring point, top of casing, 3.8 feet above land surface and 1,155.4 feet above mean sea level. After measurement in June 1896, 3 feet of casing was cut off, but all measurements have been corrected to the original measuring point. Record furnished by Gage Canal Company.

Jan. 4, 1919	5.91	Aug. 23, 1919	9.40	Apr. 18, 1920	3.46
11	5.78	30	9.93	24	3.25
18	5.73	Sept. 6	10.07	May 1	3.08
25	5.64	13	10.41	7	3.02
Feb. 1	5.54	20	10.75	15	2.97
8	5.44	27	11.04	22	2.96
15	5.27	Oct. 4	11.17	29	2.97
22	5.01	11	11.17	June 5	3.20
Mar. 1	4.82	18	11.17	12	3.61
8	4.82	25	11.17	19	3.97
15	4.41	Nov. 1	11.12	25	4.41
22	4.30	8	11.06	July 3	4.75
29	3.98	15	10.97	10	5.12
Apr. 5	3.83	22	10.84	17	5.58
12	3.89	29	10.75	24	6.22
19	3.36	Dec. 6	10.55	31	6.71
26	3.39	13	10.06	Aug. 7	7.22
May 3	3.43	20	9.67	14	7.80
10	3.50	27	9.25	21	8.34
17	3.55	Jan. 3, 1920	9.04	28	8.89
24	3.62	10	8.89	Sept. 4	9.19
31	3.72	17	8.73	11	9.60
June 7	3.91	24	8.67	18	9.95
14	4.31	31	8.67	25	10.11
21	4.65	Feb. 7	8.67	Oct. 2	10.43
28	5.09	14	8.66	9	10.70
July 5	5.84	21	8.55	16	10.96
12	6.33	Mar. 5	6.03	23	11.02
19	7.20	13	5.36	30	10.98
26	7.59	20	4.93	Nov. 6	10.91
Aug. 2	8.10	27	4.49	13	10.81
9	8.51	Apr. 3	4.01	20	10.69
16	9.00	10	3.82	27	10.61

Williams well.--Continued

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Dec. 4, 1920	10.53	Apr. 1, 1921	2.68	Sept. 15, 1923	6.85
11	10.45	8	2.53	22	7.00
18	10.40	15	2.44	29	7.01
25	10.34	22	2.46	Oct. 6	7.29
Jan. 1, 1921	10.28	29	2.58	13	7.32
8	10.19	May 6	2.69	20	7.35
15	10.10	13	2.74	27	7.42
22	9.84	20	2.72	Nov. 3	7.48
29	9.27	27	2.74	10	7.50
Feb. 5	8.72	June 3	2.84	17	7.40
12	8.27	9	2.98	24	7.27
19	7.95	17	3.10	Dec. 1	7.19
26	7.76	24	3.19	8	7.16
Mar. 5	7.60	July 1	3.23	15	6.93
12	7.51	8	3.35	22	6.79
19	7.06	15	3.42	29	6.70
26	6.18	22	3.50	Jan. 5, 1924	6.44
Apr. 2	5.79	29	3.55	12	6.17
9	5.73	Aug. 5	3.65	19	5.72
16	5.82	12	3.75	26	5.55
23	5.82	19	3.92	Feb. 2	5.47
30	5.95	26	4.16	9	5.47
May 7	6.19	Sept. 2	4.29	16	5.55
14	6.39	9	4.48	23	5.69
21	6.61	16	4.69	Mar. 1	5.93
28	6.70	23	4.91	8	6.10
June 4	6.74	30	5.08	15	6.32
11	6.79	Oct. 7	5.26	22	6.49
18	6.79	14	5.37	29	6.45
25	7.20	21	5.40	Apr. 5	6.32
July 2	8.58	28	5.41	12	6.07
9	10.00	Nov. 4	5.39	19	5.64
16	10.59	11	5.26	26	5.31
23	11.17	18	4.95	May 3	5.16
30	11.66	25	4.67	10	5.18
Aug. 6	11.96	Dec. 9	4.20	17	5.44
13	12.30	16	3.78	24	5.76
20	12.69	23	3.21	30	6.12
27	13.05	Jan. 6, 1923	2.58	June 9	6.67
Sept. 3	13.40	13	2.40	13	6.91
10	13.67	20	2.28	21	7.52
17	13.90	Feb. 3	2.00	28	7.93
24	14.09	10	1.83	July 5	8.32
Oct. 1	14.27	17	1.72	12	8.71
8	14.28	Mar. 3	1.52	19	9.13
15	14.28	10	1.41	26	9.51
22	14.22	17	1.35	Aug. 2	9.88
29	14.21	24	1.35	9	10.24
Nov. 5	14.15	31	1.59	16	10.62
12	14.12	Apr. 7	1.84	23	10.93
19	14.12	14	2.03	30	11.28
26	14.12	21	2.03	Sept. 6	11.62
Dec. 3	14.12	28	2.01	13	11.92
10	14.11	May 5	2.01	20	12.22
17	14.11	12	2.10	27	12.49
24	9.91	19	2.33	Oct. 4	12.75
31	7.04	26	2.50	11	12.94
Jan. 7, 1922	6.04	June 2	2.79	18	13.11
14	5.56	9	3.04	25	13.24
21	5.10	July 10	4.29	Nov. 1	13.33
28	4.80	14	4.38	8	13.38
Feb. 4	4.31	21	4.64	15	13.38
11	3.82	28	4.86	22	13.46
18	3.38	Aug. 4	5.28	29	13.43
25	3.08	11	5.53	Dec. 6	13.38
Mar. 4	3.01	18	5.83	13	13.29
11	3.00	25	6.08	20	13.16
18	2.88	Sept. 1	6.38	Jan. 3, 1925	12.83
25	2.72	8	6.61	10	12.63

Williams well.--Continued

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 16, 1925	12.53	June 5, 1926	13.02	Jan. 7, 1928	19.83
24	12.51	12	13.75	14	19.41
31	12.39	19	14.39	21	19.02
Feb. 7	12.39	26	15.05	28	18.69
14	12.45	July 3	15.71	Feb. 4	18.56
21	12.60	10	16.45	11	18.08
28	12.70	17	17.12	18	17.58
Mar. 7	12.81	24	17.84	25	17.16
14	12.81	31	18.48	Mar. 3	16.83
21	12.87	Aug. 7	19.18	10	16.60
28	13.02	14	19.78	17	16.30
Apr. 4	13.17	21	20.52	24	16.27
11	13.19	28	21.02	31	16.33
18	13.18	Sept. 4	21.60	Apr. 5	16.33
25	13.27	11	22.09	14	17.18
May 2	13.41	18	22.60	21	18.12
9	13.70	25	22.99	28	19.16
16	13.96	Oct. 2	23.37	May 5	20.02
23	14.26	9	23.66	12	20.65
30	14.53	16	23.96	19	21.00
June 6	14.88	23	24.17	26	21.51
13	15.17	30	24.47	June 2	22.13
20	15.51	Nov. 6	24.54	9	22.75
27	15.93	13	24.67	16	23.35
July 4	16.23	20	24.91	23	23.94
11	16.58	27	25.03	30	24.56
18	17.00	Dec. 4	25.03	July 7	25.05
24	17.37	11	24.89	14	25.58
Aug. 1	17.83	18	24.48	21	26.07
8	18.22	25	23.87	28	26.61
15	18.56	Jan. 1, 1927	23.43	Aug. 4	27.10
22	18.92	8	22.96	11	27.59
29	19.30	15	22.53	18	27.98
Sept. 5	19.66	22	22.09	25	28.01
12	20.00	29	21.67	Sept. 1	28.84
19	20.34	Feb. 5	21.21	10	29.42
20	20.63	Apr. 11	9.83	15	29.72
Oct. 3	20.89	26	9.52	22	30.10
10	20.99	May 14	10.50	29	30.52
17	20.99	June 4	13.54	Oct. 6	30.76
24	20.99	11	14.26	13	30.94
31	20.83	18	15.03	Nov. 3	31.22
Nov. 7	20.75	25	15.86	10	31.30
14	20.65	July 2	16.60	17	31.32
21	20.65	9	17.23	24	31.32
28	20.54	16	17.77	Dec. 1	31.32
Dec. 5	20.32	23	18.35	8	31.23
12	20.08	30	18.93	15	30.78
19	19.76	Aug. 6	19.39	29	30.09
Jan. 2, 1926	19.43	13	19.85	Jan. 5, 1929	29.78
9	19.40	20	20.40	12	29.47
16	19.40	27	21.10	19	29.27
23	19.69	Sept. 3	21.46	26	28.95
30	19.87	10	21.88	Feb. 2	28.69
Feb. 6	19.92	17	22.34	9	28.33
13	19.93	24	22.72	16	27.91
20	19.86	Oct. 1	22.98	23	27.67
27	19.77	8	23.18	Mar. 2	27.23
Mar. 6	19.53	15	23.46	9	26.93
13	19.37	22	23.75	23	26.68
20	19.34	29	23.89	30	26.63
27	19.34	Nov. 5	23.88	Apr. 6	26.63
Apr. 3	19.34	12	23.80	13	26.45
10	18.70	18	22.72	20	26.08
May 1	11.87	26	21.82	27	25.79
8	11.67	Dec. 3	21.47	May 4	25.78
15	11.67	10	21.26	11	25.84
22	11.91	17	20.85	June 1	26.81
29	12.38	31	20.11	8	27.29

Williams well.--Continued

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
June 15, 1929	27.96	Oct. 25, 1930	39.30	Feb. 20, 1932	38.44
22	28.71	Nov. 1	39.36	27	35.98
29	29.50	8	39.39	Mar. 5	34.33
July 6	30.22	15	39.49	12	33.36
13	30.96	22	39.54	19	32.53
20	31.63	28	39.60	26	32.05
27	32.33	Dec. 6	39.60	Apr. 2	32.05
Aug. 3	32.92	13	39.60	9	31.75
10	33.55	20	39.60	16	31.83
17	34.05	27	39.58	23	32.08
24	34.58	Jan. 3, 1931	39.56	30	32.19
31	35.05	10	39.51	May 7	32.19
Sept. 7	35.51	17	39.32	14	32.03
14	35.93	24	39.24	21	31.97
21	36.28	31	38.83	28	31.72
28	36.62	Feb. 7	38.50	June 4	31.48
Oct. 5	36.83	14	38.17	11	31.12
12	36.93	21	37.58	18	30.85
19	37.05	28	37.00	25	30.83
26	37.17	Mar. 7	36.23	July 2	30.98
Nov. 2	37.30	14	35.56	9	31.43
9	37.42	21	35.24	16	31.87
16	37.57	28	35.23	23	32.35
23	37.73	Apr. 4	35.23	31	32.98
30	37.73	11	35.55	Aug. 6	33.69
Dec. 6	37.84	18	36.03	13	34.68
13	37.96	25	36.61	20	35.09
21	37.96	May 2	36.94	27	35.74
28	37.98	9	37.14	Sept. 3	36.41
Jan. 4, 1930	37.98	16	37.20	10	36.84
11	37.98	23	37.34	17	37.64
18	37.98	30	37.65	25	38.13
25	37.86	June 6	37.92	Oct. 1	38.65
Feb. 1	37.79	13	38.23	8	38.93
8	37.79	20	38.42	14	39.31
15	37.79	27	38.78	22	39.35
22	37.79	July 4	39.30	29	39.88
Mar. 1	37.79	11	39.76	Nov. 5	40.13
8	35.50	18	40.25	12	40.38
15	34.29	25	40.69	19	40.64
22	33.95	Aug. 1	41.19	26	40.88
Apr. 5	32.62	8	41.68	Dec. 3	41.12
12	32.20	15	42.22	10	41.36
19	31.80	22	42.80	17	41.50
26	31.66	29	43.28	24	41.52
May 3	31.71	Sept. 5	43.65	31	41.52
10	31.50	12	44.03	Jan. 7, 1933	41.35
17	30.54	19	44.36	14	40.97
24	29.65	26	44.69	21	40.42
31	29.02	Oct. 3	45.01	28	39.85
June 7	29.01	10	45.29	Feb. 4	39.14
14	29.17	17	45.65	11	38.25
21	29.64	24	45.83	18	37.41
28	30.22	31	46.03	25	36.58
July 5	30.90	Nov. 7	46.16	Mar. 4	35.84
19	32.16	14	46.30	11	35.22
26	32.96	21	46.47	18	35.00
Aug. 2	33.76	28	46.50	25	34.86
9	34.53	Dec. 5	46.53	Apr. 1	34.85
16	35.20	12	46.53	8	35.04
23	35.88	20	46.47	15	35.37
30	36.53	26	46.39	22	35.75
Sept. 6	37.05	Jan. 2, 1932	45.91	29	36.38
13	37.62	9	45.49	May 6	36.83
20	38.13	16	44.90	13	37.25
27	38.55	23	43.80	20	37.56
Oct. 4	38.86	30	42.59	27	37.82
11	39.10	Feb. 6	42.02	June 3	38.14
18	39.31	13	41.11	10	38.54

Williams well.--Continued

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
June 17, 1933	38.97	Aug. 18, 1934	54.24	Oct. 26, 1935	56.02
24	39.43	25	54.76	Nov. 2	56.26
July 1	40.09	Sept. 1	55.18	9	56.50
8	40.62	8	55.61	16	56.65
15	41.42	15	55.98	23	56.90
22	41.79	22	56.32	30	57.06
29	42.40	29	56.66	Dec. 7	57.15
Aug. 5	42.99	Oct. 6	56.89	14	57.23
12	43.57	13	56.98	21	57.25
19	44.05	20	57.10	28	57.25
26	44.56	27	57.19	Jan. 1, 1936	57.25
Sept. 2	45.09	Nov. 3	57.19	8	57.25
9	45.48	10	57.23	15	57.25
16	45.98	17	57.29	23	57.29
23	46.37	24	57.27	Feb. 1	57.29
30	46.71	Dec. 1	57.24	8	56.70
Oct. 7	47.04	8	57.00	15	56.59
14	47.29	15	56.93	29	55.68
21	47.51	22	56.71	Mar. 7	55.68
29	48.00	29	56.24	16	53.64
Nov. 4	48.20	Jan. 5, 1935	55.72	21	50.81
11	48.38	12	55.26	28	49.83
18	48.56	19	54.72	Apr. 4	48.02
25	48.76	26	54.18	11	47.60
Dec. 2	48.96	Feb. 2	53.60	18	47.12
9	49.04	9	52.96	25	46.85
16	49.12	16	52.29	May 2	46.72
23	49.16	23	51.38	9	46.68
30	49.16	Mar. 2	50.50	16	46.68
Jan. 2, 1934	49.12	9	49.60	23	46.83
6	49.18	16	48.75	30	47.12
13	48.62	23	48.04	June 6	47.60
20	47.05	30	47.44	13	48.12
27	45.83	Apr. 6	46.95	20	48.79
Feb. 3	44.95	13	46.44	27	49.50
10	44.31	20	46.26	July 4	50.23
17	43.93	27	45.91	11	51.08
24	43.81	May 4	45.65	18	51.77
Mar. 3	43.81	11	45.41	25	52.60
10	43.55	18	45.29	Aug. 1	53.39
17	43.46	25	45.25	8	54.29
24	43.46	June 1	45.25	15	55.02
Apr. 1	43.59	8	45.31	22	55.54
7	43.88	15	45.39	29	56.12
14	44.40	22	45.62	Sept. 5	56.68
21	45.09	29	46.12	12	57.29
28	45.72	July 6	46.69	19	57.77
May 5	46.28	13	47.38	26	58.22
12	46.87	20	48.13	Oct. 3	58.65
19	47.50	27	49.13	10	58.98
26	48.00	Aug. 3	49.67	17	59.27
June 2	48.53	10	50.59	24	59.48
9	49.01	17	51.11	31	57.72
16	49.37	24	51.71	Nov. 7	58.52
23	49.88	31	52.40	14	58.73
30	50.32	Sept. 7	53.00	21	58.73
July 7	50.78	14	53.51	28	58.73
14	51.33	21	54.09	Dec. 5	58.71
21	51.78	28	54.59	12	58.71
28	52.44	Oct. 5	55.09	19	58.52
Aug. 4	53.11	12	55.46	26	58.29
11	53.72	19	55.70		

a Probably affected by seepage.

MOKELUMNE AREA

By Arthur M. Piper

The program of water-level measurements in wells in the Mokelumne area, Calif., was continued in 1936 by the East Bay Municipal Utility District and the Pacific Gas & Electric Co. Records of water levels in 1935 in 24 selected observation wells in the area were published in Water-Supply Paper 777, pages 27-34. Measurements of water level made in these wells by the two agencies in 1936 appear in the following pages. The water levels are given in feet above mean sea level. To avoid confusion resulting from changes in measuring points each measuring point has been assigned a number, such as (1) or (2), which appears with the description of the point. The altitudes of the measuring points were determined from spirit leveling by the United States Geological Survey and the East Bay Municipal Utility District. The datum is mean sea level, general adjustment of 1929.

A comparison between the stages of the water levels in the wells on several dates in 1936 with stages on corresponding dates in 1935 is given in the following table.

Net annual change in ground-water level, in feet above (+) or below (-) the level on corresponding dates in 1935,
in 24 wells in the Mokelumne area, California

	1936		
	Jan. 1	July 1 ^{a/}	Dec. 31
Greatest recession or least rise among the 24 wells	-2.50	-1.00	+0.29
Greatest rise among the 24 wells	+1.65	+2.76	+2.51
Arithmetic average of water-level changes in all 24 wells	+ .10	+1.08	+1.36

^{a/} Approximate date of maximum pumpage in pumping season.

Ground-water levels in 1936 in typical wells in the Mokelumne area,
California

(Water levels are given in feet above mean sea level. For complete descriptions of the wells see Water-Supply Paper 777, pages 27 to 34)

363f1. Lillian C. Schleefer. Measuring point (1), top of concrete pit curb west of well, 0.4 foot above land surface and 40.95 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	27.24	Apr. 14, 1936	29.57	Sept. 25, 1936	28.62
17	27.21	23	29.97	Oct. 21	28.27
Feb. 7	26.95	May 5	30.20	Dec. 9	27.85
21	27.50	July 28	a 17.38	19	27.79
Mar. 11	29.08	Sept. 11	28.86	31	27.53

368Pl. G. W. and W. P. Vallem. Measuring point (1), top of casing, 1.2 feet above land surface and 25.95 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 9, 1936	12.47	Apr. 15	17.16	Oct. 7, 1936	11.59
20	12.71	27	17.04	22	11.83
Feb. 10	13.03	July 15	12.33	Dec. 10	12.60
27	15.30	Sept. 4	11.20	21	12.75
Mar. 12	16.45	16	b,c -2.67		

3636R2. Leland W. Bunch. Measuring point (3), floor of concrete pit, marked by arrow, 7.6 feet below land surface and 30.37 feet above mean sea level. This measuring point applies also to records in Water-Supply Paper 777, in which the measuring point is described incorrectly.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	13.98	Apr. 2, 1936	19.47	Sept. 8, 1936	16.23
10	14.03	8	19.49	17	15.77
21	14.42	20	19.47	Oct. 12	15.95
Feb. 12	d 14.89	28	19.46	27	16.07
28	19.97	June 4	19.10	Dec. 11	16.19
Mar. 2	19.87	July 16	17.63	22	16.24

373B1. Jacob Knoll. Measuring point (1), top of casing at south side, 1.4 feet above land surface and 81.85 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 9, 1936	44.24	Apr. 6, 1936	48.48	Sept. 8, 1936	46.82
10	44.27	8	48.58	17	46.56
21	44.67	20	48.69	Oct. 16	45.97
Feb. 13	44.90	29	e 49.11	27	45.79
28	47.39	June 9	50.01	Dec. 11	45.91
Mar. 5	48.46	July 16	49.50	22	45.81

376J8. R. E. and Ruth F. Coker. Measuring point (1), top of casing, 0.4 foot above land surface and 53.75 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	29.10	Mar. 11, 1936	30.73	July 28, 1936	29.95
8	29.11	Apr. 6	29.97	Sept. 11	29.21
17	29.27	14	30.16	25	29.09
Feb. 7	29.59	23	30.55	Oct. 21	29.00
21	29.88	May 5	30.94	Dec. 9	29.80
Mar. 4	30.50	June 4	31.71	19	29.92

a Pump operating in well.
b Pump operating in irrigation well close at hand.
c Feet below sea level.

d Adjacent land overflowed by stream.
e Adjacent land being irrigated.

Ground-water levels in the Mokelumne area, California--Continued

377J1. J. and Rachel K. Goetken. Measuring point (2), gasket of suction flange, after lowering pump, 28.6 feet below land surface and 23.99 feet above mean sea level (used by East Bay Municipal Utility District). Measuring point (3), pump-house floor south of well, brass nail with washer, 1.0 foot above land surface and 53.65 feet above mean sea level (used by Pacific Gas & Electric Co.).

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	22.33	Apr. 2, 1936	21.75	July 28, 1936	20.10
7	22.57	6	f	Sept. 11	21.41
17	22.56	14	19.89	25	21.53
Feb. 7	22.85	23	a	Oct. 21	22.28
21	22.90	May 5	a	Dec. 9	23.15
Mar. 4	23.19	June 2	20.39	19	23.31
11	22.93			31	23.47

3710K3. Edward Preszler. Measuring point (1), top of casing at south side, 1.2 feet above land surface and 73.79 feet above mean sea level.

Jan. 8, 1936	31.92	Apr. 6, 1936	28.07	July 16, 1936	28.42
10	32.15	8	27.89	Sept. 8	30.34
21	32.34	20	27.64	17	30.89
Feb. 3	30.14	29	24.83	Oct. 16	32.32
13	28.59	May 4	b 23.48	27	32.55
28	30.07	June 4	27.43	Dec. 11	33.46
Mar. 4	29.66	July 1	28.31	22	33.69

3710K4. Edward Preszler. Measuring point (1), top of casing at south side, 0.7 foot above land surface and 73.07 feet above mean sea level.

Jan. 8, 1936	32.02	Apr. 6, 1936	27.07	July 16, 1936	27.78
10	32.23	8	26.97	Sept. 8	30.37
21	32.49	20	27.31	17	30.92
Feb. 3	29.90	29	b 24.80	Oct. 16	32.30
13	29.57	May 4	b 25.96	27	32.53
28	31.00	June 4	28.06	Dec. 11	f 33.43
Mar. 4	30.22	July 1	27.67	22	33.60

3715P2. Eugene R. Hieb. Measuring point (2), top of instrument shelf, 3.5 feet above land surface and 70.34 feet above mean sea level.

Jan. 7, 1936	25.58	Apr. 2, 1936	26.39	Sept. 8, 1936	24.34
10	25.66	8	26.55	17	24.49
21	25.84	20	26.09	Oct. 12	25.52
27	25.96	28	25.77	27	25.66
Feb. 12	26.29	June 4	b 16.57	Dec. 11	26.72
28	26.44	July 16	22.62	22	26.95

3719A2. C. M. Ferdun. Measuring point (1), top of casing, 0.5 foot above land surface, 48.82 feet above mean sea level (used by United States Geological Survey and taken as datum for following measurements) and 48.90 feet above mean sea level (used by East Bay Municipal Utility District).

Jan. 7, 1936	17.17	Apr. 2, 1936	18.55	Sept. 8, 1936	17.07
10	17.24	8	18.32	17	17.08
21	17.44	20	17.72	Oct. 12	17.27
29	17.50	28	17.34	27	17.46
Feb. 12	17.85	June 4	19.62	Dec. 11	18.29
28	18.42	July 16	19.19	22	18.52

a Pump operating in well.
b Pump operating in irrigation
well close at hand.

f 2-horsepower pump installed
in well.

Ground-water levels in the Mokelumme area, California--Continued

3727F3. John F. Heitzmann. Measuring point (1), top of casing, 1.7 feet above land surface and 61.12 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 8, 1936	21.95	Apr. 8, 1936	23.17	Sept. 17, 1936	21.98
10	21.97	20	23.30	Oct. 16	22.12
21	22.08	29	23.34	27	22.18
Feb. 13	22.42	June 4	23.27	Dec. 11	22.79
28	22.58	July 16	22.48	22	22.94
Apr. 6	23.07	Sept. 8	22.02		

3730E2. W. L. Flanigan. Measuring point (3), base of turbine at punched hole in casing, 8.4 feet below land surface. This measuring point applies also to records in Water-Supply Paper 777, in which the measuring point is described incorrectly.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	15.47	Apr. 2, 1936	19.88	Sept. 8, 1936	13.67
10	15.27	8	19.60	17	14.60
21	15.56	28	18.45	Oct. 12	15.36
Feb. 3	16.08	May 5	18.70	27	15.80
12	16.15	June 4	17.22	Dec. 11	17.13
28	19.75	July 2	12.80	22	17.44
Mar. 4	20.33	16	12.76		

4612R1. G. A. Jahant. Measuring point (2), top of tile casing, 18.4 feet below land surface and 38.94 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	24.66	Apr. 14, 1936	27.42	Sept. 25, 1936	23.79
13	24.92	23	27.50	Oct. 21	24.26
17	24.86	May 5	26.94	Dec. 9	25.54
Feb. 7	25.37	June 9	27.11	19	25.84
21	25.84	July 28	23.94	31	26.18
Mar. 11	26.42	Sept. 11	23.57		

4634R1. E. M. Smith. Measuring point (2), top of outer casing, 0.2 foot above land surface and 43.46 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 3, 1936	30.46	Mar. 2, 1936	30.31	July 2, 1936	33.10
7	30.36	11	30.61	28	32.91
17	30.39	Apr. 1	31.06	Sept. 11	32.46
27	30.09	14	31.52	25	32.38
29	29.37	23	32.06	Oct. 21	32.20
Feb. 3	29.96	May 1	b 32.34	Dec. 9	31.68
7	29.88	5	32.44	19	31.56
21	29.91	June 2	33.03	31	31.35

4636A1. D. D. Smith and S. H. and I. Zimmerman. Measuring point (1), top of casing, flush with land surface, 49.90 feet above mean sea level (used by United States Geological Survey and taken as datum for following measurements) and 50.00 feet above mean sea level (used by East Bay Municipal Utility District).

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	28.47	May 18, 1936	31.43	June 19, 1936	29.95
14	28.42	20	31.41	22	30.47
17	28.42	22	31.20	24	30.28
Feb. 3	28.09	25	30.31	26	28.50
7	28.08	27	29.87	29	28.73
21	29.26	29	30.21	July 1	28.14
Mar. 6	30.73	June 1	30.24	6	29.42
11	30.85	3	30.39	13	b 24.88
Apr. 14	29.10	5	26.89	28	27.76
14	29.11	8	30.97	Sept. 11	29.98
23	30.22	10	31.00	25	30.14
May 4	29.68	10	31.52	Oct. 21	30.12
5	29.30	12	30.83	Dec. 9	30.11
13	30.72	15	29.87	19	29.84
15	30.99	17	b 26.52	31	29.72

b Pump operating in irrigation well close at hand.

Ground-water levels in the Mokelumne area, California--Continued

5715C3. Robert L. Carter. Measuring point (1), top of casing, 1.0 foot above land surface and 93.05 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 6, 1936	41.38	Apr. 15, 1936	42.71	Sept. 23, 1936	40.49
15	41.50	22	42.68	Oct. 20	40.90
16	41.45	May 1	42.78	29	41.09
23	41.69	June 11	42.16	Dec. 8	41.75
Feb. 20	41.90	July 21	40.73	15	41.98
Mar. 10	42.25	Sept. 10	b 40.10	30	42.22
Apr. 10	41.70				

4718N3. Martha Eddlemon. Measuring point (1), top of casing, 0.8 foot above land surface and 59.84 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	23.59	Apr. 14, 1936	26.56	Sept. 11, 1936	20.15
14	23.79	14	26.04	25	21.47
17	23.84	23	23.29	Oct. 21	23.16
27	24.28	May 5	25.34	Dec. 9	25.44
Feb. 7	24.59	June 10	23.64	19	25.34
21	25.04	July 28	17.74	31	25.73
Mar. 11	25.76				

4722Q4. Adolphus Eddlemon. Measuring point (1), top of casing, 0.8 foot above land surface, 84.41 feet above mean sea level (used by United States Geological Survey and taken as datum for following measurements) and 84.57 feet above mean sea level (used by East Bay Municipal Utility District).

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 6, 1936	42.04	Mar. 10, 1936	43.59	July 21, 1936 b	42.77
15	42.23	Apr. 10	43.74	Sept. 10	41.23
16	42.26	15	43.76	23	41.69
23	42.43	22	43.83	Oct. 20	42.71
Feb. 3	42.62	May 1	b 43.65	29	43.00
6	42.69	4	b 43.48	Dec. 8	43.88
20	43.01	June 11	42.83	18	44.01
Mar. 9	43.54	July 1	b 42.34	30	44.21

4722Q5. Adolphus Eddlemon. Measuring point (1), top of casing, 0.2 foot above land surface, 84.03 feet above mean sea level (used by United States Geological Survey and taken as datum for following measurements) and 84.15 feet above mean sea level (used by East Bay Municipal Utility District).

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 6, 1936	42.63	Mar. 10, 1936	44.23	July 21, 1936 b	33.75
15	42.88	Apr. 10	41.69	Sept. 10	36.83
16	42.93	15	41.91	23	40.84
23	43.03	22	41.49	Oct. 20	42.56
Feb. 3	42.97	May 1	b 36.37	29	42.85
6	43.06	4	b 36.44	Dec. 8	43.52
20	43.83	June 11	40.08	18	43.78
Mar. 9	44.32	July 1	b 32.70	30	44.21

4727P1. Frank H. and Leonard W. Buck. Measuring point (1), top of casing, 0.9 foot above land surface and 82.10 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 6, 1936	47.65	Apr. 10, 1936	51.15	Sept. 23, 1936	48.98
15	48.02	15	51.48	Oct. 20	48.46
16	48.08	22	e 52.21	29	48.45
23	48.88	May 1	e 53.19	Dec. 8	48.51
Feb. 20	48.28	June 11	53.03	18	48.50
Mar. 9	52.22	July 21	e 51.12	30	48.68
10	52.10	Sept. 10	49.85		

b Pump operating in irrigation
well close at hand.

e Adjacent land being irrigated.

Ground-water levels in the Mokelumne area, California--Continued

4730J2. Clara A. Barton. Measuring point (1), top of casing, 13.6 feet below land surface and 44.67 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	27.23	Apr. 14, 1936	26.92	Sept. 11, 1936	28.91
14	27.34	14	27.15	18	26.53
17	27.31	23	g 26.57	Oct. 21	27.23
Feb. 7	27.62	May 5	25.98	Dec. 9	28.55
21	27.84	June 10	26.07	19	28.72
Mar. 11	28.45	July 28	25.03	31	28.84

4731J3. Charles H. Woest. Measuring point (4), top of casing, 11.2 feet below land surface and 46.55 feet above mean sea level.
Measuring point (5), top of casing (extended), south side, 0.8 foot below land surface and 56.93 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	33.03	Apr. 14, 1936	33.95	July 1, 1936	36.39
14	33.28	14	33.72	28	35.45
17	33.63	23	h 37.08	Sept. 11	34.62
Feb. 3	33.33	May 4	35.21	25	34.63
7	33.29	5	35.33	Oct. 21	34.39
21	35.95	11	35.81	Dec. 9	34.23
Mar. 6	37.25	June 10	38.94	19	34.17
11	36.93				

4731N5. Jacob Goehring. Measuring point (1), top of casing, 2.9 feet above land surface and 47.02 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 7, 1936	34.09	Mar. 11, 1936	37.78	July 1, 1936	38.73
14	34.34	Apr. 14	37.52	28	37.56
17	34.81	14	a 37.53	Sept. 11	36.56
Feb. 3	34.50	23	39.92	25	36.35
7	34.40	May 4	39.33	Oct. 21	35.82
21	37.42	5	39.43	Dec. 9	35.17
Mar. 6	38.30	June 10	39.70	19	34.99

4734G1. John J. Schmiedt. Measuring point (1), top of casing, 0.7 foot above land surface and 58.20 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 9, 1936	48.88	Apr. 6, 1936	52.70	Sept. 8, 1936	49.05
10	49.03	8	52.53	17	49.02
21	50.43	20	1	Oct. 16	48.92
Feb. 13	50.60	29	1	27	48.85
28	i	June 9	d 56.36	Dec. 11	49.16
Mar. 5	i 55.22	July 16	51.00	22	49.12

a Pump operating in well.

d Adjacent land overflowed by stream.

g Pump in observation well stopped a few minutes before measurement.

h New measuring point established.

i Well and adjacent land under water.

COLORADO

SAN LUIS VALLEY

By T. W. Robinson

The San Luis Valley, in south-central Colorado, is a long, flat depressional valley with high mountain ranges on the east and west. The altitude of the valley floor is more than 7,500 feet at most places. Both unconfined shallow ground water and artesian water occur in the valley fill. Over most of the valley floor the shallow ground water can be obtained within 15 feet of the surface, and artesian water within 50 to 250 feet. On the alluvial slopes of the valley the depth to the shallow ground water may exceed 100 feet. Development of the artesian water began about 1880, and at the present time there are over 6,000 flowing wells in the valley.

The first measurements of artesian pressure were made by Professor Carpenter,^{1/} of the Colorado Agricultural College, in 1891. In 1904 Siebenthal^{2/} made a few measurements of artesian pressure. The first extensive measurements of water levels of the shallow ground water were made^{3/} in the period April 20, 1912, to April 30, 1915, by Stannard and Miller in 32 wells in the vicinity of Mosca, north of the Rio Grande. The depth to water level in an unknown number of shallow wells was also measured during part of this period in the Carmel drainage district, south of the Rio Grande. These measurements were made in connection with the construction of drainage ditches.

In the spring and summer of 1931 the State engineer of Colorado bored 127 observation wells to the shallow ground water in the trough of of the Closed Basin area, north of the Rio Grande. The depth to water level in these wells was measured periodically during the spring, summer, and fall of 1931 and 1932. Later in the summer and fall of 1931 the State engineer of New Mexico bored 126 observation wells to the shallow ground water in the Closed Basin area. Measurements of depths to water level in these wells were made at irregular intervals from November 1931, to November 1935. Altitudes of the measuring points of the wells were

^{1/} Carpenter, L. G., Artesian wells of Colorado and their relation to irrigation: Colorado Agr. Exper. Sta., Bull. 16.

^{2/} Siebenthal, C. E., Geology and water resources of the San Luis Valley, Colorado: U. S. Geol. Survey Water-Supply Paper 240, 1910.

^{3/} Stannard, J. D., and Miller, D. G., Cooperative report on drainage and water development, San Luis Valley, Colorado, U. S. Dept. Agr., manuscript report, 1915.

established by spirit leveling carried on by the State engineers of Colorado and New Mexico.

Beginning in March 1936, the United States Geological Survey, in connection with the Rio Grande Joint Investigation, established 341 observation wells in the valley. This number includes 22 artesian wells, one of which was equipped with an automatic water-stage recorder for 3 months. The observation wells for the shallow ground water were divided into two groups, one consisting of 245 wells in the Closed Basin area north of the Rio Grande, and the other consisting of 74 wells south of the Rio Grande. Included in the group of wells in the Closed Basin area were 24 of the wells bored by the State engineer of Colorado and 125 of the wells bored by the State engineer of New Mexico. The remaining 96 wells were established by the United States Geological Survey in the spring of 1936. Measurements of water levels in the wells were made about monthly until December 1936. Three of the wells were equipped with automatic water-stage recorders for short periods during the growing season.

The water level in the artesian wells was observed to rise in the spring and decline in the fall in response to irrigation. The maximum fluctuation recorded in 1936 amounted to 3.07 feet.

The water level in the shallow wells was found to fluctuate in response to irrigation, rainfall penetration, pumping, and transpiration draft. Fluctuations caused by irrigation were largest; the maximum fluctuation observed in 1936 amounting to 8.5 feet. Fluctuations of the water table in response to rainfall penetration varied with the intensity of individual storms. A rise of the water table of more than 1.85 feet was observed in one well that was equipped with a water-stage recorder in the period July 27 to August 6, 1936, when the rainfall amounted to 2.54 inches. A reconnaissance of the pumping plants used for irrigation during the summer of 1936 showed that there were 176 in the valley. As these plants are used only when there is a shortage of surface water for irrigation, fluctuations of the water level due to pumping occur chiefly during years of low run-off. The water table, as the result of transpiration draft, declines progressively throughout the growing season except in the irrigated areas. In July 1936 the water table stood 5 feet or less below the land surface in approximately 70 percent of the valley, and from 5 to 8 feet in approximately 20 percent. Hence conditions nearly everywhere in the valley are favorable for the use of ground water by plants.

It is contemplated that all the water-level measurements made since 1931 will be published in the report of the Rio Grande Joint Investigation under the auspices of the National Resources Committee. No provision has been made at this time for future measurements.

Water levels in typical observation wells in the San Luis Valley.

Colorado, 1931 to 1936

All measurements of depth to water level after March 11, 1936, were made by the United States Geological Survey. Measurements prior to that date were made by the State engineer of Colorado or of New Mexico, as indicated by the name of the State and the State well number in parentheses following the well number used in this report. Altitudes refer to sea-level datum, general adjustment of 1929.

Nonflowing Artesian wells

11J13R1. Howard Macy. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 40 N., R. 7 E. Stock well, diameter 2 inches, depth 123 feet. Iron casing. Measuring point, top of casing, 2.2 feet above land surface and 7,680.68 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 8, 1936	5.75	July 20, 1936	4.33	Oct. 14, 1936	4.29
May 5	3.72	Aug. 18	4.68	Nov. 16	4.55
June 8	3.05	Sept. 18	4.50	Dec. 17	5.15

13Q28B1. Owner unknown. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 38 N., R. 12 E. Abandoned well, diameter 3 inches, depth 103 feet. Iron casing. Measuring point, top of casing 2.1 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 15, 1936	1.64	July 13, 1936	1.77	Oct. 12, 1936	1.64
May 14	1.59	Aug. 13	1.75	Nov. 10	1.59
June 11	1.65	Sept. 12	1.71	Dec. 10	1.48

16L32P1. Frank Morgan. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 35 N., R. 9 E. Domestic well, diameter 2 inches, depth 61 feet. Iron casing. Measuring point, Apr. 13 to Oct. 15, top of casing, 0.5 feet above land surface; on and after Oct. 15, top of casing, 0.33 feet lower.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 13, 1936	4.29	July 23, 1936	2.66	Oct. 15	2.99
May 6	3.66	Aug. 19	2.24	Nov. 18	2.91
June 10	2.56	Sept. 21	2.88	Dec. 16	3.40

Water table wells

5M32N1. (N. Mex., X-25). SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 45 N., R. 10 E. Observation well, diameter 2 inches, depth 6.7 feet. Galvanized-iron casing. Measuring point, top of casing, 0.1 foot above land surface and 7,624.71 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Nov. 19, 1931	4.18	Jan. 26, 1934	4.09	Aug. 9, 1935	5.43
Mar. 9, 1932	3.74	Mar. 30	3.99	Sept. 19	5.35
May 18	4.20	May 7	4.21	Nov. 24	4.34
June 7	4.19	31	4.46	Mar. 19, 1936	4.03
Aug. 16	5.39	June 30	5.02	Apr. 17	3.99
Sept. 14	5.20	Aug. 4	5.17	May 20	4.28
Oct. 10	4.57	31	5.32	June 22	4.93
Nov. 10	4.25	Oct. 12	4.54	July 22	5.26
Feb. 21, 1933	4.02	Dec. 28	4.19	Aug. 21	4.72
Mar. 25	3.99	Feb. 14, 1935	4.04	Sept. 19	4.86
May 25	4.13	Apr. 3	4.04	Oct. 19	4.42
July 25	4.88	May 16	3.90	Nov. 19	4.19
Sept. 29	4.74	June 10	4.47	Dec. 14	4.22

7K10A1. (N. Mex., E-10). NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 43 N., R. 8 E. Observation well, diameter 2 inches, depth 6.2 feet. Galvanized-iron casing. Measuring point, top of casing, flush with land surface and 7,591.14 feet above mean sea level.

Nov. 18, 1931	4.61	Jan. 26, 1934	3.65	Aug. 9, 1935	4.81
Mar. 9, 1932	2.83	Mar. 30	2.40	Sept. 19	4.61
Apr. 21	2.57	May 7	2.83	Nov. 23	4.43
May 18	2.99	31	3.60	Mar. 19, 1936	3.15
June 7	3.01	June 30	4.45	Apr. 17	1.80
Aug. 16	4.64	Aug. 4	4.82	May 20	3.37
Sept. 13	4.96	31	4.95	June 22	4.23
Oct. 10	5.05	Oct. 12	5.04	July 21	4.72
Nov. 12	4.61	Dec. 28	4.18	Aug. 24	4.47
Feb. 21, 1933	4.11	Feb. 14, 1935	3.74	Sept. 19	4.33
Mar. 25	2.97	Apr. 3	3.18	Oct. 20	4.17
May 25	2.96	May 16	2.71	Nov. 20	3.83
July 25	4.48	June 11	3.56	Dec. 14	3.76
Sept. 29	4.96				

7M12A1. (N. Mex., F-6). NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 12, R. 43 N., R. 10 E. Observation well, diameter 2 inches, depth 8.3 feet. Galvanized-iron casing. Measuring point, top of casing flush with land surface and 7,587.47 feet above mean sea level.

Nov. 19, 1931	4.44	Sept. 29, 1933	4.40	Aug. 9, 1935	4.47
Mar. 9, 1932	2.83	Jan. 26, 1934	4.07	Sept. 19	4.72
May 18	3.08	Mar. 30	3.09	Nov. 23	3.96
June 7	3.34	May 7	3.21	Mar. 19, 1936	3.39
July 5	3.79	31	3.64	Apr. 17	3.08
Aug. 16	4.47	June 29	4.20	May 20	3.32
Sept. 14	4.67	Aug. 4	4.31	June 10	3.59
Oct. 10	4.59	31	4.68	July 23	4.32
Nov. 12	4.29	Oct. 12	4.51	Aug. 21	3.78
Feb. 21, 1933	4.58	Dec. 28	4.20	Sept. 18	3.69
Mar. 25	3.89	Feb. 14, 1935	4.06	Oct. 19	3.46
May 25	3.08	Apr. 3	3.69	Nov. 19	2.99
July 25	4.08	May 16	3.46	Dec. 15	3.15

9J25A1. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T. 42 N., R. 7 E. Observation well, diameter 2 inches, depth 4.8 feet. Galvanized-iron casing. Measuring point 0.3 foot above land surface and 7,613.69 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
May 22, 1936	1.65	Aug. 19, 1936	3.02	Nov. 13, 1936	2.13
June 22	2.41	Sept. 19	3.46	Nov. 17	2.01
Aug. 5	3.45	Oct. 20	2.61	Dec. 18	2.59

9L27A1. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 42 N., R. 9 E. Observation well, diameter 2 inches, depth 3.8 feet. Galvanized-iron casing. Measuring point 0.2 foot above land surface.

May 9, 1936	2.35	Sept. 17, 1936	2.80	Nov. 18, 1936	0.86
20	2.55	Oct. 15	2.98	Dec. 17	1.12
June 20	3.23				

9M20J1. (N. Mex., X-9). NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 42 N., R. 10 E. Observation well, diameter 2 inches, depth 10.0 feet. Galvanized-iron casing. Measuring point, top of casing flush with land surface and 7,539.62 feet above mean sea level.

Nov. 19, 1931	6.00	Jan. 26, 1934	5.83	Aug. 9, 1935	6.21
Mar. 9, 1932	5.29	Mar. 30	5.56	Sept. 18	6.26
May 18	5.21	May 7	5.46	Nov. 23	6.25
June 7	5.33	31	5.64	Mar. 19, 1936	6.01
July 5	5.58	June 29	5.86	Apr. 17	5.89
Aug. 16	5.69	Aug. 3	6.01	May 20	5.75
Sept. 14	5.81	31	6.10	June 23	6.08
Oct. 10	5.89	Oct. 12	6.16	July 23	6.27
Nov. 10	5.90	Dec. 27	6.12	Aug. 21	6.09
Feb. 21, 1933	5.99	Feb. 14, 1935	6.05	Sept. 18	4.84
Mar. 25	5.71	Apr. 3	5.93	Oct. 16	4.85
May 26	5.45	May 16	5.83	Nov. 19	4.95
July 25	5.07	June 10	5.74	Dec. 15	5.06
Sept. 28	5.69				

9Q30D1. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30, T. 1 N., R. 1 E., Luis Maria Baca Grant No. 4 survey. Observation well, diameter 2 inches, depth 9.7 feet. Galvanized-iron casing. Measuring point, top of casing, 0.2 feet above land surface and 7,624.46 feet above mean sea level.

May 11, 1936	8.13	July 22, 1936	8.36	Nov. 16, 1936	7.95
26,	7.84	Aug. 19	8.40	Dec. 12	7.87
June 23	8.15	Oct. 21	8.05		

10K19N1. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T. 41 N., R. 8 E. Observation well, diameter 1 inch, depth 7.0 feet. Iron-pipe casing. Measuring point, top of casing, 0.55 foot above land surface and 7,652.48 feet above mean sea level.

June 9, 1936	2.62	Sept. 19, 1936	3.97	Nov. 17, 1936	3.23
Aug. 7	3.78	Oct. 20	3.12	Dec. 18	3.88
Aug. 18	3.75				

10L30A1. (N. Mex., D-8). NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 41 N., R. 9 E. Observation well, diameter 2 inches, depth 6.6 feet. Galvanized-iron casing. Measuring point, top of casing, flush with land surface and 7,588.85 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Nov. 20, 1931	5.30	Jan. 26, 1934	4.87	Aug. 9, 1935	4.10
Mar. 9, 1932	3.95	Mar. 30	3.17	Sept. 19	4.08
Apr. 21	3.68	May 7	3.11	Nov. 22	3.76
May 18	3.55	30	3.59	Mar. 17, 1936	3.49
June 8	3.61	June 30	4.47	Apr. 16	2.77
Aug. 16	4.24	Aug. 3	5.13	May 19	3.04
Sept. 15	3.96	30	5.40	June 20	3.75
Oct. 11	4.07	Oct. 11	5.29	July 20	4.27
Nov. 12	3.77	Dec. 28	4.90	Aug. 18	3.70
Feb. 20, 1933	5.02	Feb. 14, 1935	4.72	Sept. 17	3.41
Mar. 24	4.33	Apr. 4	3.81	Oct. 15	3.22
May 24	3.33	May 6	3.31	Nov. 18	3.38
July 24	4.01	June 10	3.31	Dec. 17	3.79
Sept. 28	4.55				

10M33R2. (N. Mex., C-2). SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 41 N., R. 10 E. Observation well, diameter 2 inches, depth 8.5 feet. Galvanized-iron casing. Measuring point, top of casing, 7,548.10 feet above mean sea level.

Nov. 19, 1931	5.22	Sept. 27, 1933	4.47	Aug. 8, 1935	3.79
Mar. 9, 1932	4.08	Jan. 25, 1934	4.72	Sept. 17, 1935	3.74
Apr. 21	4.31	Mar. 29	3.76	Nov. 23	3.86
May 19	4.48	May 5	4.08	Mar. 17, 1936	3.69
June 7	3.72	31	4.40	Apr. 16	3.72
July 5	3.29	June 29	5.20	May 18	3.66
Aug. 15	3.52	Aug. 3	5.35	June 24	4.09
Sept. 13	3.18	30	5.73	July 18	4.08
Oct. 10	3.44	Oct. 11	5.80	Aug. 19	3.78
Nov. 10	2.95	Dec. 27	5.79	Sept. 17	3.99
Feb. 20, 1933	4.30	Feb. 13, 1935	5.61	Oct. 14	3.80
Mar. 24	3.19	Apr. 2	5.32	Nov. 16	3.64
May 24	2.81	May 15	5.24	Dec. 12	3.93
July 24	3.06	June 9	5.33		

11H14B1. Owner unknown. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 40 N., R. 6 E. Domestic well, diameter 4 inches, reported depth 40 feet. Iron casing. Measuring point, top of casing, 1.0 foot above land surface and 7,804.41 feet above mean sea level.

Apr. 18, 1936	12.98	July 17, 1936	10.19	Oct. 10, 1936	9.68
May 5	11.92	Aug. 18	9.97	Nov. 16	10.02
June 8	10.72	Sept. 17	9.79	Dec. 17	10.93

11J13R3. Howard Macy. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 40 N., R. 7 E. Stock well, 4 feet square, depth 6 feet. Wood casing. Measuring point, top of 1 by 12-inch board at southeast corner of well cover, 3 notches, 1.3 feet above land surface and 7,680.47 feet above mean sea level.

May 5, 1936	3.40	Aug. 18, 1936	4.77	Nov. 16, 1936	5.27
June 8	3.27	Sept. 18	5.38	Dec. 18	5.85
July 20	3.99	Oct. 14	5.05		

11K13R1. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 40 N., R. 8 E. Observation well, diameter 2 inches, depth 4.7 feet. Galvanized-iron casing. Measuring point, top of casing, 0.25 feet above land surface and 7,609.74 feet above mean sea level.

May 2, 1936	1.99	July 21, 1936	2.52	Oct. 16, 1936	2.77
18	2.06	Aug. 18	2.21	Nov. 17	2.81
June 11	1.82	Sept. 16	3.39	Dec. 16	3.16
20	1.92				

11M21D1. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 40 N., R. 10 E. Observation well, diameter 2 inches, depth 5.3 feet. Galvanized-iron casing. Measuring point, top of casing, 0.3 foot above land surface and 7,557.24 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
May 1, 1936	3.27	Aug. 12, 1936	2.04	Oct. 15, 1936	3.43
18	3.34	18	2.50	Nov. 17	3.66
June 20	2.03	Sept. 16	3.20	Dec. 17	3.92
July 20	2.56				

11N26B1. (N. Mex. R-2). NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26, T. 40 N., R. 11 E. Observation well, diameter 2 inches, depth 6.0 feet. Galvanized-iron casing. Measuring point, top of casing, flush with land surface and 7,524.60 feet above mean sea level.

June 6, 1932	1.84	May 8, 1934	1.30	Mar. 21, 1936	1.51
Aug. 16	1.20	July 2	2.56	24	1.43
Sept. 15	1.42	Aug. 2	3.05	Apr. 24	1.25
Oct. 11	1.57	Oct. 11	4.01	May 21	1.53
Nov. 14	1.36	Dec. 27	2.40	June 18	2.26
Feb. 22, 1933	.7	Feb. 13, 1935	3.03	July 16	2.70
Mar. 24	.77	Apr. 2	3.22	Aug. 14	1.80
May 26	1.08	May 15	3.95	Sept. 15	2.12
July 26	1.04	June 9	4.04	Oct. 13	1.86
Sept. 27	1.76	Aug. 8	3.75	Nov. 13	1.30
Jan. 27, 1934	1.37	Sept. 17	4.06	Dec. 11	1.00
Mar. 29	.84	Nov. 22	3.05		

11Q17G2. (N. Mex. C-14). SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 40 N., R. 12 E. Observation well, diameter 2 inches, depth 10.0 feet. Galvanized-iron casing. Measuring point, top of casing, 7,552.56 feet above mean sea level.

Nov. 17, 1931	3.57	Jan. 25, 1934	3.45	Aug. 8, 1935	3.54
Mar. 9, 1932	.67	Mar. 24	2.15	Sept. 17	3.81
Apr. 20	2.42	May 5	2.40	Nov. 23	3.11
May 19	2.86	29	3.31	Mar. 17, 1936	2.39
June 6	2.89	June 30	3.79	Apr. 16	2.00
Aug. 15	4.03	Aug. 3	4.11	May 18	2.91
Sept. 15	4.03	30	4.53	June 24	3.50
Oct. 11	3.52	Oct. 11	3.85	July 18	3.88
Nov. 14	3.31	Dec. 27	3.55	Aug. 19	3.35
Feb. 20, 1933	2.87	Feb. 13, 1935	3.34	Sept. 15	3.36
Mar. 24	1.55	Apr. 2	3.03	Oct. 14	2.85
May 24	2.87	May 15	2.65	Nov. 14	2.72
July 24	3.43	June 9	3.02	Dec. 12	3.17
Sept. 26	3.32				

12J10K1. E. L. Neff. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 10, T. 39 N., R. 7 E. Irrigation well, diameter 16 inches, depth 49.5 feet. Galvanized-iron casing. Measuring point, top of casing, south side, 1.1 feet above land surface.

Apr. 2, 1936	13.54	Sept. 17, 1935	6.73	Nov. 16, 1936	7.64
May 5	5.46	Oct. 14	7.06	Dec. 17	8.81
June 8	5.04				

12L17R1. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 39 N., R. 9 E. Observation well, diameter 2 inches, depth 5.0 feet. Galvanized-iron casing. Measuring point, top of casing, 0.25 foot above land surface and 7,593.72 feet above mean sea level.

Apr. 30, 1936	2.55	July 31, 1936	3.54	Oct. 15, 1936	3.10
May 16	2.33	Aug. 17	3.00	Nov. 17	3.03
June 19	3.0	Sept. 16	3.57	Dec. 16	3.34
July 17	3.40				

12M14N1. (N. Mex., Y-10). SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T. 39 N., R. 10 E. Observation well, diameter 2 inches, depth 7.4 feet. Galvanized-iron casing. Measuring point, top of casing, flush with land surface and 7,546.80 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Nov. 20, 1931	5.55	Sept. 26, 1933	5.72	Aug. 8, 1935	6.10
Mar. 10, 1932	5.18	Jan. 25, 1934	5.60	Sept. 18	6.12
Apr. 20	5.05	Mar. 29	5.28	Nov. 22	5.73
May 18	5.06	May 5	5.23	Mar. 12, 1936	5.34
June 7	5.17	29	5.56	Apr. 15	5.17
July 5	5.41	June 29	5.65	May 14	5.11
Aug. 15	5.71	Aug. 3	5.87	June 18	5.35
Sept. 13	5.82	29	6.01	July 15	5.54
Oct. 10	5.85	Oct. 10	6.11	Aug. 15	5.05
Nov. 10	5.68	Dec. 27	6.00	Sept. 14	4.99
Feb. 20, 1933	5.69	Feb. 13, 1935	5.94	Oct. 14	4.85
Mar. 24	5.45	Apr. 4	5.80	Nov. 19	4.78
May 24	5.15	May 15	5.73	Dec. 15	4.80
July 22	5.44	June 9	5.60		

12Q18N1. (Colo. 86). SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 39 N., R. 12 E. Observation well, diameter 2 inches, depth 4.5 feet. Galvanized-iron casing. Measuring point, top of casing, flush with land surface and 7,517.59 feet above mean sea level.

July 7, 1931	2.42	Apr. 29, 1932	1.52	Aug. 25, 1932	1.52
13	2.46	May 6	1.55	Sept. 1	1.67
21	2.37	13	1.60	8	1.86
29	2.53	19	1.62	15	2.00
Aug. 5	2.62	26	1.07	22	2.12
11	2.66	June 3	1.63	Oct. 4	2.25
21	2.72	9	1.68	19	2.52
26	2.75	18	1.78	Nov. 1	2.55
Sept. 2	2.78	23	.50	June 1, 1936	2.72
9	2.77	29	.89	13	2.85
15	2.80	July 8	1.31	18	2.97
22	2.73	15	1.24	July 14	3.21
30	2.75	21	1.42	Aug. 14	2.08
Oct. 15	1.26	28	1.55	Sept. 12	2.09
23	1.65	Aug. 4	1.66	Oct. 12	1.89
30	1.88	11	1.80	Nov. 11	1.88
Apr. 22, 1932	1.46	19	1.92	Dec. 11	1.95

13N16D1. (N. Mex. Z-5). NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T. 38 N., R. 11 E. Observation well, diameter 2 inches, depth 12.0 feet. Galvanized-iron casing. Measuring point, top of casing, 7,531.50 feet above mean sea level.

Nov. 21, 1931	8.76	Jan. 25, 1934	7.81	Aug. 10, 1935	6.84
Mar. 8, 1932	8.95	Mar. 31	7.82	Sept. 18	7.52
May 19	8.37	May 5	7.84	Nov. 23,	7.51
June 7	7.92	29	7.22	Mar. 13, 1936	7.63
July 6	7.89	June 29	7.76	Apr. 15	7.86
Aug. 16	7.94	Aug. 4	8.73	May 14	7.72
Sept. 15	8.09	29	8.24	June 13	7.08
Oct. 11	8.06	Oct. 10	8.44	July 15	7.67
Nov. 10	8.09	Dec. 27	8.55	Aug. 14	7.62
Feb. 20, 1933	8.38	Feb. 13, 1935	8.54	Sept. 14	7.73
Mar. 24	8.49	Apr. 2	8.59	Oct. 13	7.81
May 23	8.03	May 15	8.45	Nov. 11	7.76
July 24	8.13	June 11	7.93	Dec. 11	7.72
Sept. 27	7.72				

14N11G1. (Colo. 147). SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 37 N., R. 11 E. Observation well, diameter 2 inches, depth 6.5 feet. Galvanized-iron casing. Measuring point, top of casing, 0.25 foot above land surface and 7,536.43 feet above mean sea level.

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
May 3, 1932	2.78	July 27, 1932	4.30	Oct. 31, 1932	4.20
14	3.06	Aug. 3	4.28	Apr. 23, 1936	2.97
20	1.40	10	4.24	May 14	3.08
June 2	3.27	17	4.62	June 11	4.11
8	3.30	24	4.68	July 24	4.82
15	3.68	30	4.62	Aug. 13	4.13
21	3.80	Sept. 7	4.60	Sept. 11,	3.89
28	3.70	13	4.62	Oct. 12	3.17
July 6	3.95	20	4.76	Nov. 10	2.94
14	4.12	Oct. 3	4.58	Dec. 10	3.18
20	4.12	18	4.39		

14K23M1. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 37 N., R. 8 E. Observation well, diameter 1 inch, depth 10.0 feet. Iron-pipe casing. Measuring point, top of casing, 0.3 foot above land surface.

May 15, 1936	4.32	Aug. 14, 1936	5.59	Oct. 16, 1936	4.73
June 8	4.07	29	5.57	Nov. 10	4.97
25	4.48	Sept. 15	4.91	Dec. 15	5.28
July 29	5.89	29	4.97		

14K31D1. John Corral. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 31, T. 37 N., R. 8 E. Domestic well, diameter 3.5 feet, depth 46 feet. Wood casing. Measuring point, top of pump platform, west side of pump, copper nail with washer, 0.7 foot above land surface.

June 30, 1936	27.59	Sept. 16, 1936	23.54	Nov. 13, 1936	29.69
July 18	27.17	17	23.62	Dec. 15	32.70
Aug. 17	27.33	Oct. 19	27.13		

14M21N1. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 37 N., R. 10 E. Observation well, diameter 2 inches, depth 4.5 feet. Galvanized-iron casing. Measuring point, top of casing, 0.55 foot above land surface and 7,535.48 feet above mean sea level.

May 25, 1936	2.70	July 29, 1936	4.11	Sept. 29, 1936	3.00
June 9	2.94	Aug. 15	3.90	Oct. 16	2.92
25	3.36	31	3.51	Nov. 12	2.83
27	3.41	Sept. 14	3.44	Dec. 16	2.87
July 16	3.94				

15K21H1. Roy Frasier. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 36 N., R. 8 E. Domestic well, 3.5 feet square, depth 105 feet. Wooden casing. Measuring point, top of 2 by 12-inch plank, east side, copper nail and washer, 0.5 foot above land surface.

June 30, 1936	102.69	Sept. 16, 1936	101.34	Nov. 13, 1936	100.42
July 20	102.43	Oct. 19	100.67	Dec. 16	100.24
Aug. 17	101.81				

15M28R1. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, R. 36 N., R. 10 E. Observation well, diameter 2 inches, depth 5.5 feet. Galvanized-iron casing. Measuring point, top of casing, 0.3 foot above land surface.

May 27, 1936	4.36	July 29, 1936	4.25	Oct. 1, 1936	4.71
June 9	1.47	Aug. 15	4.14	15	4.45
26	2.20	Sept. 1	4.44	Nov. 12	4.22
July 16	3.68	16	4.72	Dec. 17	3.90

FLORIDA

By V. T. Stringfield

Measurements of water levels in wells in Florida were continued in 1936 in connection with the cooperative ground-water investigation by the Florida Geological Survey, Herman Gunter, State geologist, and the United States Geological Survey. A brief description of the projects and the availability of measurements prior to 1936 is given on pages 40 to 42 of Water-Supply Paper 777.

During 1936 the pressure head on an artesian well and the water level in a sinkhole or natural well in Marion County, together with water levels in four wells in Leon County, were measured at more or less regular intervals. Measurements in Marion County were made by D. S. Wallace, district engineer, or his assistants. Three of the wells in Leon County were measured by F. C. Westendick about twice each month, and one of the wells was measured daily by the Tallahassee Water Department. A description of the observation wells in Marion County and all the measurements on these wells to the end of 1936 are included on the following pages. The measurements on the wells in Leon County, together with measurements made by F. C. Westendick or the writer on about 50 wells in Florida west of the Suwannee River, will be included in a report now being prepared on that area.

An automatic water-level recorder on an artesian well near Sarasota, Sarasota County, and an automatic pressure recorder on an artesian well in Jacksonville, Duval County, have been in operation since 1930. Acknowledgments are due to the Palmer Corporation for changing the charts on the recorder at Sarasota and to the Jacksonville Water Department for changing the charts on the recorder in Jacksonville.

Marion County

Sharpes Ferry well, drilled by U. S. Engineer Department. It is designated as Marion County 5 in United States Geological Survey Water-Supply Paper 773-C. The well is on the west side of the Oklawaha River and the north side of the road that crosses the river at Sharpes Ferry, about 8 miles east of Ocala, in sec. 11, T. 15 S., R. 23 E. Diameter 6 inches, depth 135 feet, cased 135 feet. Measuring point, top of 6-inch casing, 42.53 feet above mean sea level and about 3 feet above the land surface at the well. Yields artesian water from the Ocala limestone.

This well is in one of the artesian areas that will be affected considerably with a permanent loss of artesian head if the trans-Florida ship canal is completed. The fluctuation of the pressure head in this well is similar to the fluctuation of water levels in wells in an area to the west where the Ocala limestone is present at or near the surface and where water enters that formation. Also the fluctuations are somewhat similar to those in the Blue Grotto near Bellview, which is described and for which measurements are given on one of the following pages. This similarity is to be expected because the Blue Grotto apparently extends in depth to the Ocala limestone. The range of the fluctuation of the Sharpes Ferry well was about 8 feet during the period from January 1933 to the end of 1936. The pressures show a very close relationship to the rainfall, being highest during or after periods of relatively heavy rains.

Pressure head in Sharpes Ferry well,
Marion County, Florida, in feet above measuring point

Date	Feet	Date	Feet	Date	Feet
Jan. 21, 1933	3.1	Oct. 13, 1934	8.5	Aug. 31, 1935	4.9
28	3.3	20	9.0	Sept. 7	5.8
Feb. 4	3.4	27	9.0	14	7.0
Apr. 1	2.9	Nov. 3	9.0	21	7.6
May 13	4.1	24	8.4	28	8.4
20	4.1	Dec. 1	8.0	Oct. 5	8.3
27	4.1	8	7.2	12	8.5
June 17	3.9	15	7.5	19	8.7
Aug. 19	5.5	29	6.8	26	8.6
Sept. 30	10.5	Jan. 5, 1935	7.0	Nov. 2	8.5
Oct. 7	11.0	12	7.6	9	8.3
28	9.0	19	7.2	16	8.2
Nov. 4	9.0	26	7.0	23	8.0
Jan. 6, 1934	8.0	Feb. 2	7.2	30	7.7
13	8.0	9	6.5	Dec. 7	7.6
20	6.5	16	6.0	14	7.5
27	7.0	23	5.5	21	7.3
Feb. 3	7.0	Mar. 2	5.5	28	7.2
10	7.0	9	5.4	Jan. 11, 1936	7.05
Mar. 3	6.0	16	5.1	18	6.9
10	6.0	23	5.0	25	6.6
17	5.5	30	5.2	Feb. 8	6.75
31	5.4	Apr. 6	4.8	15	7.6
Apr. 7	5.2	13	4.6	21	7.7
14	5.5	20	4.6	29	7.3
28	5.3	28	4.3	Mar. 7	6.9
May 4	4.8	May 11	4.2	14	7.3
19	5.2	18	4.0	21	8.5
26	5.6	25	4.0	28	8.3
June 2	5.6	June 1	3.8	Apr. 11	8.5
30	9.0	8	3.8	18	8.45
July 7	10.0	15	3.6	25	8.40
21	9.0	22	3.6	May 9	8.10
28	9.0	29	3.4	16	7.95
Aug. 4	9.0	July 6	3.5	23	7.80
17	9.0	13	3.3	June 6	7.75
25	9.8	20	3.5	13	7.80
Sept. 1	9.2	27	3.8	20	8.9
8	9.5	Aug. 3	4.0	27	8.5
22	8.8	10	3.9	July 3	7.7
29	9.0	24	4.6	11	7.75

Pressure head in Sharpes Ferry well,--Continued

Date	Feet	Date	Feet	Date	Feet
July 18, 1936	7.3	Sept. 26, 1936	6.9	Dec. 5, 1936	6.6
25	7.6	Oct. 3	6.75	12	6.5
Aug. 1	7.5	10	6.75	19	6.35
8	7.5	17	7.0	Jan. 2, 1937	6.1
15	7.4	24	6.9	9	5.90
22	7.4	31	6.9	16	5.85
29	7.2	Nov. 7	6.9	23	5.8
Sept. 5	7.2	21	6.8	Feb. 6	5.2
12	7.15	28	6.5	13	5.6
19	7.0				

Blue Grotto sinkhole at Bellview, source of Bellview public water supply. Description of 58½ feet of the geologic section exposed in the wall of the sink is given on page 289 of the 2d Annual Report of the Florida Geological Survey. Measuring point, zero of staff gage, 43.43 feet above mean sea level, and about 80 feet below the land surface.

Water levels in Blue Grotto sink, Marion
County, Florida, in feet above zero of staff gage

Date	Feet	Date	Feet	Date	Feet
Feb. 4, 1936	5.5	Mar. 11, 1936	7.6	June 18, 1936	8.6
19	6.4	Apr. 1	8.2	15	7.37
26	6.9	May 1	7.8	26	7.3
Mar. 2	7.2	26	7.6	Sept. 3	7.00

HAWAII

By H. T. Stearns

Island of Oahu

During 1936 the United States Geological Survey made 223 monthly measurements of the water level in 19 wells on the island of Oahu. The Honolulu Board of Water Supply made a total of 249 measurements on 113 wells, of which 107 were measured more than once, and the Board maintained automatic water-stage recorders on 11 wells. Measurements of water level in well 276, which are included in this report, were furnished by the Ewa Plantation Co. This well is in artesian area 11, on the southeast shore of the Waianae Range. Records are now available for all 12 artesian areas for the first time since systematic measurements began in 1910.

The water level was higher in 9 areas and lower in 2 areas at the end of the year than at the beginning. The following table, which is essentially a continuation of the table on page 47 of Water-Supply Paper 777, indicates that there was a loss in ground-water storage in area 1, but a gain in areas 2 and 3 of the 3 areas pumped by the Honolulu Board of Water Supply. A gain in storage occurred in all but one of the larger areas pumped by sugar plantations. The large gain of 1.52 feet in the Pearl Harbor area, which is pumped at the average rate of about 150,000,000 gallons a day, represents an important increase in ground-water storage.

Time of high and low water levels in the artesian areas and the net gain or loss in static level for 1936 as shown by typical wells on Oahu

Area	Name	Well no.	High	Low	Gain or loss (feet)
1	St. Louis Heights	2	January	September	-.63
2	Makiki-Pacific Heights	83	December	August	+.48
3	Kapalama	132	December	August	+.42
4	Moanalua	144	December	July	+.74
5	Wilhelmina Rise	1A	December	June	+.10
6	Pearl Harbor	201	December	June	a/ +1.52
		244	December	June	....
		266	November	August	....
7	Waialua	326	November	June	+.23
8	Kahuku	356	November	June	a/ +.37
		396	December	January	....
9	Kahana	405	December	October	....
10	Kaaawa	406	August	February	+.28
11	Gilbert	276	December	July	+.65
12	Mokuleia	286	February	June	a/ -.20
		308	November	June	....

a/ Average.

In the following records the head of the water in the wells is expressed in feet with reference to mean sea level. In some of the wells this is the water level in the well as measured; in others it is the height to which the water would rise in a water-tight casing or tube, as indicated by the shut-in pressure.

Water levels in five wells in the Honolulu District, Oahu

(Mean daily measurements furnished by Honolulu Board of Water Supply from recorder charts)

Area Well No.	1 2	2 83	3 132	4 144	5 1A
1936					
Jan.					
1	26.57	29.08	28.79	26.45	8.41
8	26.60	29.08	28.77	26.40	8.32
15	26.38	29.08	28.68	26.28	8.38
22	26.66	28.96	28.69	26.41	8.48
29	26.40	28.98	28.61	26.29	8.49
Feb.					
5	26.47	29.11	28.72	26.46	8.56
12	26.17	29.17	28.83	26.63	a/8.51
19	25.89	29.26	28.85	26.47	8.44
26	25.70	29.33	28.85	26.42	b/8.43
Mar.					
4	25.62	29.39	28.85	26.40	8.42
11	25.49	29.35	28.79	26.29	8.33
18	25.44	29.36	28.79	26.22	8.29
25	25.46	29.32	28.72	26.18	8.27
Apr.					
1	25.18	29.17	28.60	26.09	8.21
8	25.00	29.16	28.56	26.15	8.26
15	24.61	29.05	28.51	26.10	8.29
22	24.24	28.99	28.40	25.92	8.30
29	24.37	28.91	28.31	25.81	8.39
May					
6	24.12	28.79	28.17	25.68	8.36
13	23.97	28.78	28.01	25.60	8.33
20	23.86	28.73	28.01	25.57	8.36
27	23.72	28.56	27.95	25.49	8.30
June					
3	23.50	28.46	27.79	25.38	c/8.24
10	23.36	28.28	d/27.72	25.27	8.10
17	23.42	28.02	e/27.50	25.16	7.91
24	23.56	27.85	27.27	24.96	7.93
July					
1	23.69	27.71	27.06	24.86	7.99
8	23.65	27.45	26.79	f/24.47	g/8.07
15	23.54	27.26	26.50	23.73	8.03
22	23.37	h/27.02	26.29	23.85	8.09
29	23.45	26.79	26.17	24.21	8.08
Aug.					
5	23.41	26.58	26.15	24.45	8.09
12	23.20	26.49	26.05	24.53	8.13
19	23.05	26.49	26.13	24.75	8.14
26	22.92	26.50	26.24	24.81	8.12
Sept.					
2	22.81	26.52	26.35	24.97	8.11
9	22.99	26.63	26.43	24.92	8.18
16	23.04	26.69	26.46	24.97	8.15
23	22.99	26.75	26.55	25.05	8.18
29	23.00	26.81	26.68	25.03	8.21
Oct.					
7	22.97	26.99	26.82	25.12	8.21
14	22.89	27.11	26.91	25.13	8.24
21	23.15	27.19	27.00	25.14	8.24
28	23.81	27.46	27.27	25.69	8.38
Nov.					
4	i/24.26	27.74	27.58	26.22	8.48
11	24.55	28.06	27.97	26.53	j/8.44
18	24.71	28.32	28.18	26.59	-
25	24.96	28.47	28.41	26.67	-
Dec.					
2	25.12	28.97	28.70	26.98	8.58
9	25.30	29.10	28.79	26.85	8.50
16	25.53	29.25	28.92	26.90	8.50
23	25.68	29.41	29.06	27.08	8.46
30	25.94	29.56	29.21	k/27.19	8.51
a/ Feb. 10	d/ June 19	f/ July 7	h/ July 21	j/ Nov. 10	
b/ Feb. 27	e/ July 16	g/ July 5	i/ Nov. 1	k/ Dec. 29	
c/ June 4					

Water levels in typical wells in Oahu in 1936

Well 1B (area 5). Benchmark, top of blind flange 10 feet below ground on well casing; altitude, 8.22 feet.

Date 1936	Head (feet)	Date 1936	Head (feet)	Date 1936	Head (feet)
Mar. 28	8.23	Aug. 5	8.00	Nov. 5	8.45
Apr. 24	8.27	Aug. 26	8.14	Dec. 9	8.48
May 27	8.25	Oct. 2	8.22	Dec. 31	8.46
June 25	7.89				

Well 9 (area 1).

Jan. 29	26.19	May 27	23.33	Oct. 2	22.62
Feb. 26	25.41	June 25	23.28	Nov. 5	23.40
Mar. 26	25.10	Aug. 5	22.99	Dec. 8	24.80
Apr. 24	23.73	Aug. 28	22.48	Dec. 31	25.32

Well 81 (area 2).

Jan. 29	28.90	May 27	28.54	Oct. 2	26.72
Feb. 26	29.17	June 25	27.74	Nov. 5	27.67
Mar. 26	29.26	Aug. 5	26.42	Dec. 8	29.10
Apr. 24	28.83	Aug. 28	26.42	Dec. 31	29.50

Well 119 (area 3). Benchmark has same description as in Water-Supply Paper 777 but altitude now 4.20 feet instead of 4.22 feet.

Jan. 29	28.38	May 27	27.75	Oct. 5	26.44
Feb. 26	28.70	June 25	27.20	Nov. 5	27.24
Mar. 28	28.43	Aug. 5	25.91	Dec. 10	28.50
Apr. 23	28.83	Aug. 28	25.92	Dec. 30	28.64

Well 153 (area 4).

Jan. 28	26.16	May 26	25.31	Oct. 1	25.16
Feb. 25	26.34	June 25	24.70	Nov. 5	26.12
Mar. 27	25.95	Aug. 4	24.26	Dec. 10	26.71
Apr. 24	25.66	Aug. 28	24.66	Dec. 29	27.01

Wells 187 A to C. Battery of 3 wells at pumping plant near the Aiea R. R. station in area 6. Owner, U. S. Navy. Drilled, 1923 by McCandless Bros. Altitude, A, 13 feet; B, 10 feet; C, 9 feet. Depth, A, 210 feet; B, 173 feet; C, 182 feet. Diameter, 12 inches. Use, Navy Yard supply. Casing, A, 144 feet; B, 143 feet; C, 139 feet. Aquifer is Koolau basalt. Measurements are for 187 B. Benchmark, top of west corner of concrete box 3 feet above ground; altitude, 12.93 feet. Draft averages about 2,500,000 gallons a day. Head, Dec. 24, 1935, 22.0 feet.

Jan. 29	21.96	May 27	21.05	Oct. 2	21.05
Feb. 27	22.55	June 25	20.50	Nov. 6	23.70
Mar. 28	21.66	Aug. 4	20.40	Dec. 9	22.90
Apr. 24	21.00	Aug. 28	21.50	Dec. 30	24.40

Well 190 (area 6). (Near Aiea, not Honolulu, as shown in Water-Supply Paper 777.)

Jan. 30	20.81	May 27	19.95	Oct. 2	19.81
Feb. 28	21.09	June 25	19.52	Nov. 5	22.36
Mar. 27	20.52	Aug. 4	19.58	Dec. 8	22.09
Apr. 24	19.99	Aug. 28	20.19	Dec. 30	23.10

Well 193 (area 6).

Date 1936	Head (feet)	Date 1936	Head (feet)	Date 1936	Head (feet)
Jan. 28	20.27	May 27	19.07	Oct. 3	19.78
Feb. 25	20.52	June 25	18.46	Nov. 5	21.94
Mar. 26	19.96	Aug. 3	18.55	Dec. 9	21.26
Apr. 24	19.36	Aug. 28	19.67	Dec. 30	22.62

Well 201 (area 6).

Jan. 28	19.53	May 27	18.22	Oct. 2	18.45
Feb. 28	19.80	June 25	17.57	Nov. 5	20.89
Mar. 26	19.39	Aug. 4	17.73	Dec. 8	20.75
Apr. 24	18.71	Aug. 27	18.41	Dec. 30	21.27

Well 244 (area 6).

Jan. 29	21.03	May 27	19.22	Oct. 5	19.63
Feb. 25	21.83	June 25	18.37	Nov. 5	22.99
Mar. 26	20.19	Aug. 4	18.62	Dec. 9	22.43
Apr. 24	19.21	Aug. 27	19.39	Dec. 30	23.01

Well 266 (area 6).

Jan. 29	19.52	May 27	17.79	Oct. 3	17.79
Feb. 28	20.34	June 25	17.09	Nov. 5	23.42
Mar. 26	19.62	Aug. 4	16.71	Dec. 8	21.22
Apr. 24	18.40	Aug. 27	17.62	Dec. 30	23.05

Wells 276 A to K. All wells are in a battery which yield an average of 15,000,000 gallons daily, and the pumps are known as Nos. 10, 11, and 12. Location, 3,300 feet northwest of Gilbert railroad station in area 11. Owner, Ewa Plantation Co. Drilled, A and C to H, 1908; B and I, 1923; J and K, 1913. Altitude, about 40 feet. Depth, B and I, 160 feet; E, 155 feet; F and G, 165 feet. Diameter, 12 inches. Depth to top of Waianae basalt or aquifer, B and I, 54 feet; E to G, 58 feet. Casing, B, 60 feet; I, 57 feet. Use, irrigation. Records furnished by owner are for the group of wells connected to pump 10 unless otherwise noted. Readings are made daily if the pumps are shut down, hence the levels given below are the average of a variable number of readings depending on the number of days the pump is shut down. Draw-down when all pumps are operating is only about 6 inches.

1935		1935		1936	
Jan.	13.93	Sept.	12.92	May	13.01
Feb.	13.46	Oct.	13.53	June	13.04
Mar.	14.10	Nov.	13.82	July	a/12.28
Apr.	13.55	Dec.	13.78	Aug.	12.59
May	13.20	1936		Sept.	12.49
June	13.01	Jan.	13.75	Oct.	13.24
July	12.56	Feb.	14.11	Nov.	13.76
Aug.	12.83	Mar.	13.53	Dec.	14.43
		Apr.	13.39		

a/ Head reading is for the wells connected to pump 11.

Well 286 (area 12).

Jan. 28	17.30	May 26	16.83	Oct. 1	16.70
Feb. 26	17.42	June 26	16.34	Nov. 4	17.27
Mar. 25	17.42	Aug. 4	16.42	Dec. 7	17.22
Apr. 23	16.82	Aug. 27	16.61	Dec. 30	17.34

Well 308 (area 12).

Jan. 28	18.48	May 26	18.11	Oct. 1	18.12
Feb. 25	18.77	June 26	17.71	Nov. 4	19.24
Mar. 25	18.63	Aug. 4	17.88	Dec. 7	18.67
Apr. 23	17.89	Aug. 27	18.05	Dec. 30	18.88

Well 326 (area 7).

Date 1936	Head (feet)	Date 1936	Head (feet)	Date 1936	Head (feet)
Jan. 28	10.31	May 26	10.40	Oct. 1	11.02
Feb. 25	10.86	June 26	10.18	Nov. 4	11.81
Mar. 25	10.76	Aug. 4	10.61	Dec. 7	11.55
Apr. 23	10.29	Aug. 27	11.13	Dec. 30	11.65

Well 337 (area 8).

Jan. 28	-	May 26	12.22	Oct. 1	13.25
Feb. 28	12.92	June 26	12.15	Nov. 4	13.37
Mar. 25	13.15	Aug. 3	13.17	Dec. 7	13.45
Apr. 23	13.26	Aug. 26	12.41	Dec. 29	12.73

Well 356 (area 8).

Jan. 28	12.17	May 26	11.94	Oct. 1	12.02
Feb. 25	13.55	June 26	11.89	Nov. 4	14.75
Mar. 25	13.68	Aug. 3	13.23	Dec. 7	14.43
Apr. 23	12.00	Aug. 26	13.77	Dec. 29	13.74

Well 396 (area 8). Benchmark has same description as in Water-Supply Paper 777 but was lowered to 15.52 feet in March 1936.

Jan. 28	18.70	May 26	19.26	Oct. 1	20.09
Feb. 25	19.70	June 26	19.35	Nov. 4	20.59
Mar. 24	19.96	Aug. 3	20.07	Dec. 7	20.94
Apr. 23	19.82	Aug. 26	19.61	Dec. 29	20.65

Well 405 (area 9).

Mar. 27	17.51	June 26	17.66	Oct. 1	17.50
Apr. 23	17.38	Aug. 3	17.68	Nov. 4	17.86
May 26	17.73	Aug. 26	17.69	Dec. 7	18.38
				Dec. 29	17.92

Well 406 (area 10).

Jan. 28	14.65	May 26	14.95	Oct. 1	14.72
Feb. 25	14.60	June 26	14.99	Nov. 4	14.93
Mar. 25	14.69	Aug. 3	14.87	Dec. 7	14.90
Apr. 23	14.90	Aug. 26	15.03	Dec. 29	14.90

Island of Maui

Maui consists of two mountains of volcanic origin connected by a flat strip of land known as the Isthmus, on which a number of Maui-type wells or shafts to the basal water table are located. The largest yields 40,000,000 gallons a day with a draw-down of only 2.5 feet. The water is used to irrigate two sugar plantations whenever their supply of gravity ditch water is insufficient.

The year 1936 was an excellent water year for Maui. The East Maui Irrigation Co., which transports the flow of most of the streams on the north side of East Maui to the Isthmus for irrigation of the lands of the Maui Agricultural Co., and the Hawaiian Commercial & Sugar Co., delivered in 1936 the greatest quantity of water since 1879, when it was

founded. This does not mean that 1936 was the wettest year since 1879, because the number and capacity of the ditches have been increased since 1879. But it is important because a considerable part of this water doubtless percolates to the water table under these two plantations. Furthermore, during a season of high ditch deliveries less water is pumped from the wells. Thus, high ditch deliveries directly cause a higher water table under these plantations by decreasing pumpage and increasing recharge. Usually a wet year in the ditch region also means a wet year on the Isthmus. There are two sugar plantations on West Maui -- those of the Wailuku Sugar Co. and the Pioneer Mill Co. Only the Pioneer pumps ground water.

The pumping season of 1935 of the Maui Agricultural Co. did not close until February 28, 1936, whereas so much rain fell in the winter of 1936 that the pumping season of 1936 closed on November 5, 1936. Comparative records of the static level from year to year are difficult to obtain on this plantation, because the date of closing down the pumps is so variable. H. J. Eby, pump engineer, reports that the salt content was considerably improved at the Lower Paia well at the end of 1936 as compared with the end of 1935. On September 6, 1935, with the pumps at this well delivering about 26,000,000 gallons a day, the water level was 0.63 foot; on September 4, 1936, when pumping at practically the same rate, the level was 1 foot above mean sea level. Some of this difference in static level may be a tidal effect, because the water level rises and falls a few inches a day with the tides. The static level varies only a few inches under this plantation from year to year, the chief result of a wet year being a freshening of the water.

The water level in the Hawaiian Commercial & Sugar Co.'s wells was 2 to 3 inches higher at the end of 1936 than at the end of 1935.

As shown in the following table a net gain in the water level occurred in all the wells of the Pioneer Mill Co., even though its lands lie on the lee or dry side of the West Maui Mountains. This company, however, also irrigates with water from surface streams which head in the rain belt, hence abundant rain in the mountains increases their recharge and decreases their pumpage.

Water levels and net gain in static level in feet at the
Pioneer Mill Co.'s Maui-type wells, West Maui

(Records furnished by the Pioneer Mill Co. Datum is mean sea level. Measurements were made during the last 3 or 4 days of the month, the one most representative of the station being taken.)

Well location	December 1935		December 1936		Gain 1936	
	Pumping	Shut down	Pumping	Shut down	Pumping	Shut down
Mill	-1.00	2.60	0.10	3.25	1.10	0.65
Lahaina	.75	2.10	1.75	2.95	1.00	.85
Kahoma	.75	1.80	.85	2.50	.10	.70
Olowalu	1.80	3.10	2.60	4.25	.80	1.15
Ukumehame	3.85	4.55	4.65	5.80	.80	1.25
Kanapali	.75	1.50	1.60	1.95	.85	.45

During 1936, the skimming tunnel at the Kahoma shaft was lengthened 460 feet and at the one at the mill shaft 280 feet. These developments increased the yield of the wells and accounts for part of the gain shown in the table above.

Island of Lanai

The discharge for September 1936 of lower Maunalei tunnel, which is fed by high-level ground water and which supplies Lanai City, was the lowest monthly flow since the records were started in 1926. Water-level measurements are available for Lanai for the first time, owing to a Maui-type well having been completed in 1936. This well, at an altitude of 294 feet and 2 miles from the coast in Maunalei Canyon, is a 30° inclined shaft 582 feet long. It encountered water at an altitude of 2.44 feet and is entirely in Lanai basalt. Extending southeastward from the bottom of the shaft is an infiltration tunnel 536 feet long, with its floor at altitude 1.4 feet. The water will be lifted about 1,300 feet to supply Lanai City. About 21,000,000 gallons was pumped from this well between September 22 and December 31, 1936, and the daily rate ranged from 100 to 300 gallons a minute. The pump was shut down 4 to 12 hours each day. Readings are made on a staff gage with its zero point at 2.40 feet above sea level and are furnished by the Hawaiian Pineapple Co. The water level when the pump was not running ranged from 2.40 feet above sea level on October 31 to 2.48 feet on November 12, 1936. This slight rise was caused by heavy rains about November 1. Tidal effects are apparently less than 0.02 foot.

Island of Hawaii

Water-level measurements are now available at the new Maui-type well which is at an altitude of 220 feet about 3 miles from the coast, on the slope of Mauna Loa Volcano at Olaa, Hawaii. Prior to the excavation of the shaft two wells drilled about 1904 to a depth of 450 feet and equipped with air-lift pumps supplied the water. The shaft is entirely in basalt and is 10 feet in diameter, 203.5 feet deep, and 700 feet from the drilled wells. A tunnel 12 feet long connects the bottom of the shaft with the pump chamber, which is 25 feet square. In it are three pumping units of 3,500,000-, 1,500,000- and 500,000-gallon capacity. They draw from a pump sump 24 feet long and 8 feet wide, with its floor at an altitude of 2 feet. Two 3- by 6-foot tunnels 9 feet long are at one end of the sump, and a tunnel 8 feet wide and 30 feet long is at the other end. The water is used to supply the mill of the Olaa Sugar Co., Ltd., when the flume supply is low. Water was pumped only during 2 weeks in January 1936; hence the measurements below indicate fluctuations due to natural causes. A diurnal fluctuation of 1 inch occurs, perhaps owing to changes in barometric pressure. The highest water level ever recorded in the drilled wells was at an altitude of 16.5 feet but they were not measured frequently. The maximum in the new shaft was 20.48 feet on the night of January 1, 1937, at the end of several weeks of exceptionally heavy rain.

The following records are weekly averages of two measurements made daily from the mill floor, which is at an altitude of 220 feet. All the data used herein were furnished by George Duncan, chief engineer of the Olaa Sugar Co.

Altitude of water level in Olaa shaft

Date 1936	Head (feet)	Date	Head (feet)	Date	Head (feet)	Date	Head (feet)
May 2	13.67	July 4	13.16	Sept. 5	15.41	Nov. 7	16.08
9	13.58	11	13.08	12	15.41	14	15.91
16	13.58	18	13.16	19	15.33	21	15.58
23	13.54	25	13.21	26	15.21	28	15.58
30	13.54	Aug. 1	13.25	Oct. 3	16.08	Dec. 5	15.16
June 6	13.58	8	13.67	10	16.21	12	15.00
13	13.54	15	14.58	17	16.00	19	14.58
20	13.42	22	14.91	24	15.75	26	14.50
27	13.25	29	15.16	31	15.91		

INDIANA

By V. T. Stringfield

Periodic measurements of water levels in selected observation wells in the northern half of Indiana were begun in 1935 as a cooperative program between the Division of Geology of the Indiana Department of Conservation, W. N. Logan, State geologist, and the United States Geological Survey.^{1/} The work was done by R. C. Cady, of the Federal Survey, and J. P. Kerr, assistant State geologist. Soon after the beginning of the project Professor Logan retired, and the position of assistant State geologist became vacant through the untimely death of Mr. Kerr. The cooperative program was continued in 1936 with Ralph E. Esarey, the new State geologist. The writer, accompanied part of the time by W. H. Cordell, of the Indiana Survey, spent about 2 weeks in the field during the later part of November 1936, coordinating the work started in 1935. The measurements made during 1935 and 1936 on 43 wells, together with a description of the wells and some discussion of the water-level fluctuations, are included in the following pages. It appeared desirable to extend the program throughout the State, and during the first part of December 1936 M. M. Fidler, of the State Survey, and the writer located 25 wells in the southern half of the State, of which 22 are on State property, and made arrangements to have water-level measurements made in them. At the end of 1936 measurements were being made about twice each month in 71 wells in 33 counties fairly well distributed over the State. These include 46 of the wells that were selected in 1935. Most of these wells represent shallow water-table conditions in glacial drift and are less than 50 feet deep. Some of them are somewhat deeper and penetrate consolidated rocks. A few of the wells are artesian. The measurements are made by members of the Civilian Conservation Corps, the Division of State Parks, and municipal water departments.

Boone County

Boone 1. Metropolitan Life Insurance Co., NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 18 N., R. 1 W., about 3 miles south of Lebanon along road 39, at residence of John Feeney. Dug well, depth 15.8 feet. Measuring point, concrete rim on well, slightly above land surface.

Boone 2. R. W. Gorrell, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 4, T. 18 N., R. 1 E, about 3 miles east of Lebanon along road 32, at east end of school house on south side of road. Dug well, depth 24.5 feet. Measuring point, rim of man-hole cover, slightly above land surface.

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 60-61, 1936.

Boone 3. Industrial Land Co. of Indianapolis, corner of old power station of Indiana Electric Railroad Co., Lebanon. Diameter 8 inches, depth 230 feet. Measuring point, top of tile over well, about 0.5 foot above land surface.

Water-level measurements in wells 1, 2 and 3, Boone County, were made by C. R. Brown, technical foreman, C. C. C. camp, D-7, Lebanon.

The trends of water-level fluctuations in these wells show some similarity to each other, although well 3 is reported to be 230 feet deep and penetrates bedrock, whereas wells 1 and 2 are less than 25 feet deep and yield water from glacial drift. The trends in general show seasonal changes consisting of a gradual rise of the water level during autumn and winter and a decline during spring and summer. In well 1 the water rose about 7 feet from October 1935 to April 1936 and declined about 10 feet from May to September, reaching its lowest level for the period in September 1936. In well 2 the water level rose about 4.5 feet from October 1935 to March 1936. From March to September the water level declined about 6 feet, reaching its lowest level in September. The water in well 3 rose about 7.5 feet from October 1935 to February 1936, reaching its maximum stage in February, about a month before well 2 reached a maximum and about 2 months before well 1 reached its maximum level.

Water levels in wells in Boone County,
Indiana in feet below measuring point.

Date	Boone 1	Boone 2	Boone 3	Date	Boone 1	Boone 2	Boone 3
1935				1936			
Oct. 15	10.4	9.5	27.35	May 1	4.0	5.2	22.35
Nov. 1	10.5	9.6	27.1	June 1	7.5	5.87	22.15
15	9.8	7.3	26.5	16	6.48	6.77	22.15
Dec. 2	9.6	8.13	24.68	July 1	7.8	7.6	23.2
17	9.1	7.48	22.7	15	10.2	8.3	23.98
1936				Aug. 1	9.15	9.4	25.1
Jan. 2	8.8	7.8	21.4	15	12.8	9.7	25.2
16	8.7	5.78	20.8	Sept. 7	14.5	10.05	26.2
Feb. 1	8.2	6.8	20.2	18	14.95	10.1	26.95
15	7.5	5.5	19.8	Oct. 1	14.9	8.35	27.1
Mar. 2	5.15	4.1	20.35	15	13.9	7.55	27.6
16	4.68	4.1	22.55	Nov. 2	10.8	3.0	28.14
Apr. 2	3.63	4.45	23.1	16	9.42	5.82	27.58
15	3.7	4.7	23.8	Dec. 5	9.05	6.85	.....
				20	8.8	7.1	23.58

De Kalb County

De Kalb 1. Auburn Water Department, well 3 at Auburn waterworks. Diameter 10 inches, depth 250 (?) feet. Measuring point, center of air gage on well, about 20 inches above pump-house floor and 2 feet above land surface. Measurements made by officials of Auburn water Department. Depth to water level below measuring point, Nov. 24, 1936, 10.5 feet; Dec. 10, 1936, 11.5 feet; Dec. 28, 1936, 11.5 feet.

Fulton County

Fulton 1. Town of Rochester, basement of City Hall. Diameter $1\frac{1}{2}$ inches, depth 15 feet. Measuring point, top of well casing.

Fulton 2. Town of Rochester, on waterworks plant. Diameter $1\frac{1}{4}$ inches, depth 44 feet. Measuring point, top of well casing, about 3.5 feet above land surface.

Fulton 3. Town of Rochester, U. S. Fish Hatchery of Rochester. Diameter $1\frac{1}{4}$ inches, depth 26.5 feet. Measuring point, top of casing, about 3 feet above land surface.

Measurements on Fulton 1 and 2 were made by J. Osborn, engineer, town of Rochester. Measurements on Fulton 3 were made by Tom Emmons, of the Federal Fish Hatchery, H. C. Minch, superintendent.

Water levels in wells 1, 2, and 3 in Fulton County,

Indiana in feet below measuring point.

Date	Fulton 1	Fulton 2	Date	Fulton 1	Fulton 2
1935			1936		
Oct. 15	5.2		June 15	4.15	11.40
Nov. 2	5.3		July 1	4.16	11.45
Dec. 2	5.3		15	4.20	11.19
1936			Aug. 1	5.12	11.10
Jan. 15	5.5	11.6	15	5.25	12.15
Feb. 1	5.2	11.84	Sept. 2	5.42	12.64
15	5.17	11.80	15	5.20	12.05
Mar. 2	5.15	10.48	Oct. 1	4.90	11.55
16	4.60	9.60	15	4.70	11.45
Apr. 1	4.42	11.15	Nov. 1	4.56	11.41
15	4.30	11.10	15	4.52	11.39
May 2	4.27	11.04	Dec. 1	4.52	11.37
15	4.22	11.24	15	4.48	11.33
June 1	4.17	11.44			

Date	Fulton 3	Date	Fulton 3	Date	Fulton 3
1935		1936		1936	
Oct. 17	12.24	Jan. 16	11.36	June 1	8.4
Nov. 2	12.60	Feb. 1	11.75	18	10.0
15	12.48	15	11.98	July 3	10.1
Dec. 2	12.50	Mar. 6	11.42	Nov. 18	11.63
16	12.00	17	11.70	Dec. 1	12.0
1936		Apr. 16	9.64	17	12.16
Jan. 2	11.95	May 4	8.47		

Hamilton County

Hamilton 1. Public Service Co. of Indiana, east bank of White River at Noblesville water plant. Diameter 8 inches, depth 65 feet. Measuring point, top of well casing, about 3 feet above low-water level of White River.

Hamilton 2. Public Service Co. of Indiana, Noblesville water plant, "old ice plant well." Diameter 8 inches, depth 265 feet. Measuring point, 3-inch nipple on top of 8-inch casing, about flush with land surface and 6 inches below wood cover.

Measurements were made by A. L. Wann, engineer, Noblesville water plant, Public Service Co. of Indiana.

Well 2 in Hamilton County penetrates limestone and apparently is not affected by pumpage from the nearby wells that penetrate glacial drift. As normally might be expected in a deep well of this type, the range in

water-level fluctuations is not great. The water level rose about 1.5 feet during the later part of February and the first part of March. A decline of slightly more than 1.5 feet occurred from April to September.

Water levels in wells in Hamilton County,
Indiana, in feet below measuring point

Date	Hamilton 1	Date	Hamilton 2	Date	Hamilton 2
1935		1935		1936	
Nov. 2	2.3	Nov. 2	25.3	June 2	24.42
16	2.3	16	25.4	15	24.57
Dec. 5	2.35	5	25.65	July 1	24.80
16	2.34	16	25.58	13	25.01
1936		1936		Aug. 1	25.29
Jan. 1	2.29	Jan. 1	25.60	Sept. 1	25.70
Feb. 2	2.31	18	25.46	16	25.60
	well placed	Feb. 2	25.48	Oct. 1	25.66
	in service;	15	25.45	16	25.58
	measurements	Mar. 15	24.00	Nov. 1	25.6
	discontinued	Apr. 4	23.95	16	25.57
		May 2	24.15	Dec. 1	24.96
		16	24.25	15	25.42

Henry County

Henry 1. Town of Newcastle, Newcastle waterworks. Diameter 12 inches, depth 150 feet. Measuring point, top of air line, about 0.5 foot above concrete floor of pump house. Measurements made by Nelson Howard, engineer of plant, C. E. Scholl, superintendent. Well is affected by pumpage from nearby wells.

Water levels in well 1 in Henry County, Indiana,
in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1935	16	Mar. 16, 1936	15	Aug. 15, 1936	29
Nov. 1	17.5	Apr. 1	23	Sept. 3	25
16	28	June 1	29	30	27
Dec. 1	13	15	25	Oct. 16	27
16	19	July 1	27	Nov. 4	19
Jan. 16, 1936	15	15	36	Dec. 1	21
Feb. 15	27	Aug. 3	31		

Howard County

Howard 1. Pittsburg Plate Glass Co., north side of Creek and about 0.1 mile west of Kokomo Water Works. Diameter 6 (?) inches, depth 300 feet. Measuring point, nut on top of cap, about 3 feet above land surface. Measurements made by A. P. Long (deceased) and O. Thompson, engineer, Kokomo water works, F. P. Stradling, superintendent.

Fluctuations in this well appear to be affected in part by pumpage from city wells about 0.1 mile away. The few measurements available appear to indicate a seasonal trend similar to the seasonal trend in well 2 in Hamilton County.

Water levels in well 1 in Howard County, Indiana,
in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1935	18.90	Mar. 15, 1936	16.5	Oct. 1, 1936	16.6
Nov. 1	19.60	July 19	19.95	15	16.0
16	19.40	Aug. 1	20.00	Nov. 1	15.0
Dec. 1	18.90	16	20.3	16	14.7
15	19.10	Sept. 1	17.5	Dec. 3	16.3
Jan. 1, 1936	18.80	17	16.3	16	16.4
15	18.10				

Jasper County

Jasper 1. Jasper County Road Department, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 29 N., R. 5 W., at farm of William Seltzer; John Osborn, tenant. Diameter 4 inches, depth 13 feet. Measuring point, top of 4-inch casing, about 2 feet above land surface. Measurements made by personnel of C.C.C. camp near Monon.

Water levels in well 1 in Jasper County, Indiana,
in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1936	10.07	Mar. 16, 1936	7.14	Sept. 3, 1936	10.17
31	10.31	31	6.22	15	10.20
Nov. 15	9.36	Apr. 15	6.03	Oct. 3	10.17
30	8.80	30	6.02	16	9.21
Dec. 16	8.28	May 15	5.79	31	8.10
31	8.25	June 15	7.53	Nov. 14	6.14
Jan. 15, 1936	7.74	30	8.20	Dec. 1	6.66
Feb. 1	7.91	July 15	8.92	15	7.08
15	8.12	Aug. 3	9.63	31	5.76
29	7.10	17	10.00		

Madison County

Madison 1. Mounds State Park. Diameter 1 $\frac{1}{4}$ inches, depth 17 feet. Measuring point, top of casing, about 3 feet below land surface. Measurements made by personnel of Mounds State Park.

Madison 2. Anderson Waterworks, well 2. Diameter 30 inches, depth 156 feet. Measuring point, concrete floor of pump foundation.

Madison 3. Albert Closser, about 2 blocks east of C.C.C. camp at Frankton. Diameter 4 inches, depth 36.5 feet. Measuring point, top of well casing, about 0.5 foot above land surface. Measurements made by personnel of C.C.C. camp at Frankton.

Madison 4. Walter McCoy, about 3 blocks south of C.C.C. camp at Frankton. Dug well, depth 20 feet. Measuring point, east edge of metal well curbing, about 2 feet above land surface. Measurements made by personnel of C.C.C. camp at Frankton.

Water levels in well 1 in Madison County, Indiana,
in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 18, 1935	5.2	Feb. 19, 1936	5.4	May 15, 1936	4.2
Nov. 18	6.4	Mar. 3	5.3	June 1	4.5
Dec. 9	7.4	16	5.1	15	4.7
17	7.3	Apr. 16	5.1	July 2	4.9
Jan. 1, 1936	5.3	May 2	5.0	15	5.0
Feb. 3	5.2				

Water levels in well 2 in Madison County, Indiana,
in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
1935		1936		1926	
Oct. 16	16.44	Jan. 2	16.82	Apr. 20	15.78
Nov. 1	16.63	Feb. 1	16.94	May 5	15.57
15	16.30	Mar. 5	16.30	June 5	15.22
Dec. 2	16.68	17	16.20	16	15.85
16	16.71	Apr. 4	16.11	July 9	15.27

Water levels in wells 3 and 4 in Madison County, Indiana,
in feet below measuring point.

Date	Madison 3	Madison 4	Date	Madison 3	Madison 4
1935			1936		
Oct. 15	24.99	9.17	May 16	23.31	5.97
Nov. 1	25.27	9.71	June 2	23.25	7.39
15	25.10	9.71	16	23.20	7.22
Dec. 1	25.26	9.56	July 2	23.40	8.59
15	25.24	9.53	15	24.06	9.12
1936			Aug. 1	24.36	9.52
Jan. 1	25.07	7.62	16	24.65	9.93
15	25.05	7.65	Sept. 4	24.89	10.52
Feb. 3	25.09	7.61	16	25.07	10.87
16	25.03		Oct. 2	25.34	11.06
Mar. 3	24.53	4.02	15	25.34	11.26
16	24.47	4.08	Nov. 2	25.36	4.32
Apr. 4	24.32	5.02	15	24.92	6.60
16	23.78	5.62	Dec. 2	24.93	7.42
May 3	23.68	5.82	16	25.05	7.42

Marion County

Marion 1. Indianapolis Water Co., "Motor well no. 15". At N. E. corner of intersection of Harding and 18th Streets in Riverside field, Indianapolis. Diameter 10 inches, depth 351 feet. Cased 84 feet. Measuring point, zero of gage, 5.28 feet below top of well casing, 17.82 feet below top of concrete rim of well-pit and about 16 feet below land surface.

Marion 2. 130 - East Washington Building, 130 East Washington Street, Indianapolis. Diameter 8 inches, depth 110 feet. Measuring point, top of casing, in basement, about 25 feet below land surface.

Marion 3. Manual Training High School, in school building, South Meridian and Henry Streets, Indianapolis. Diameter 6 inches, depth 200 feet. Cased 65-70 feet to limestone. Measuring point, top of well casing, water level reported about 15 to 18 feet below land surface when well was drilled.

The measurements in Marion 1 were made by the Indianapolis Water Co., in Marion 2 and 3 by W. H. Cordell, Assistant State Geologist.

The fluctuations of water level in Marion 1 are small except when they are affected by draft from nearby wells.

Maximum and minimum monthly water levels in well 1 in Marion County, Indiana, in feet below measuring point.

(From daily measurements)

Date	Water level	Date	Water level	Date	Water level
1935		1936		1936	
Aug. 1	1.10	Jan. 3	2.84	June 17	3.30
28	20.3	19	2.10	30	8.66
Sept. 1	5.1	Feb. 14	2.87	Sept. 6	2.62
9	1.82	28	.92	29	6.12
Oct. 19	3.60	Mar. 1	1.16	Oct. 3	6.30
27	2.60	19	3.28	25	2.70
Nov. 10	2.32	Apr. 12	2.64	Nov. 3	2.90
23	4.76	29	4.14	10	1.50
Dec. 6	3.00	May 8	4.44	Dec. 6	1.90
15	2.38	11	2.81	11	2.80

Water levels in wells 2 and 3 in Marion County, Indiana, in feet below measuring point.

Date	Marion 2	Marion 3	Date	Marion 2	Marion 3
1935			1936		
Oct. 15	23.1	56.4	Jan. 2	22.7	52.1
31	23.	56.6	18	22.4	51.8
Nov. 16	23.4	55.8	Nov. 27		57.26
30	23.2	53.5			
Dec. 16	22.8	52.4			

Montgomery County

Montgomery 1. W. H. Moore. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 17 N., R. 6 W., at site of burned house, Waveland. Dug well, depth 18 feet. Measuring point, top of concrete cover, about 1.5 feet above land surface.

Montgomery 2. Vandalia Railroad, in railroad stock pen, north side of track, Waveland. Dug well, depth 7.5 feet. Measuring point, west side of inner rim of opening in concrete cover, about 1 foot above land surface.

Montgomery 3. Charles Lamson, at residence, about 0.4 mile north of Waveland. Dug well, depth 15.5 feet. Measuring point, overhanging stone on east side of well, about flush with land surface.

Montgomery 4. Mrs. W. L. Glenn, at residence, about 2 miles north of Waveland. Dug well, depth 21 feet. Measuring point, top of sharp edge of stone marked with arrow on west side of well, about flush with land surface.

Water-level measurements were made by personnel of C.C.C. camp near Waveland.

The fluctuations of water level in wells 1 and 2 differ in magnitude, although the wells are in the same locality. The difference may be caused in part by the difference in topography. Well 1 is on a hillside, and well 2 is on lower ground in a valley. Fluctuations of wells 1, 3, and 4 are somewhat comparable to each other and similar to those in the shallow wells in Boone County.

Water levels in wells in Montgomery County, Indiana,
in feet below measuring point.

Date	Well 1	Well 2	Well 3	Well 4	Date	Well 1	Well 2	Well 3	Well 4
1935					1936				
Oct. 15	14.8	4.8	13.11	11.1	June 1	11.35	3.78	9.80	5.96
Nov. 1	14.87	4.36	12.84	11.74	15	12.60	4.06	11.28	7.50
15	13.13	3.62	13.14	12.06	July 1	13.42	4.14	12.20	8.71
Dec. 2	13.85	3.95	13.07	12.36	15	13.90	4.76	14.00	9.81
16	13.54	3.80	12.57	12.04	Aug. 6	14.84	5.20	13.70	10.64
1936					17	15.39	5.25	14.07	10.84
Jan. 4	13.64	3.70	12.55	11.78	Sept. 1	16.08	5.79	14.10	12.35
Feb. 6	13.23	3.55	11.59	10.91	15	15.67	3.43	14.35	12.81
19	12.22	3.39	10.29	10.45	Oct. 3	14.26	3.23	13.60	11.78
Mar. 2	9.15	2.27	5.82	8.68	15	12.34	3.04	11.30	10.79
17	9.82	2.78	6.31	8.93	Nov. 3	9.48	0.50	4.22	10.33
Apr. 1	9.3	2.64	6.1	7.4	17	10.66	3.11	8.93	10.13
16	10.24	3.30	7.29	7.95	Dec. 1	12.06	3.53	10.12	10.30
May 1	8.80	2.40	4.78	5.59	16	12.56	3.58	10.40	10.35
15	9.70	3.30	7.25	4.30	31	9.37	0.47	3.37	9.55

Porter County

Porter 1. Valparaiso Water Department, test hole at well 1 pump-house at Flint Lake, about 3 miles north of Valparaiso along route 49. Diameter 2 inches, depth 110 feet. Measuring point, top of 2-inch casing, slightly above land surface.

Porter 2. Indiana Dunes State Park, Waverly Beach, Dunes Park. Dug well, depth 22 feet. Measuring point, top of rim of manhole over well, about 2 feet above land surface.

Porter 3. Indiana Dunes State Park, near grocery store on picnic ground. Diameter $1\frac{1}{4}$ inches, depth 18 feet. Measuring point, top of casing, about 2 feet above land surface.

Porter 4. Farmers State Bank. Near intersection of old road and creek, Valparaiso. Diameter 6 inches, depth 86 feet. Measuring point, top of casing, about 3.5 feet above land surface.

Porter 5. A. A. Hanrahan, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 36 N., R. 6 W. At residence of owner, north of Valparaiso. Diameter 10 inches, depth 800 feet. Measuring point, top of east edge of casing, about 2 feet above land surface.

Measurements in well 1 were made by J. F. Bradley, engineer at Valparaiso Water Plant. Measurements in wells 2 and 3 were made by Ben Wiseman, Dunes Park, John S. Fishback, custodian. Measurements in wells 4 and 5 were made by personnel of the C.C.C. camp near Valparaiso.

The fluctuations of water level in well 1 are small except when the water level is affected by the pumping of nearby wells.

Water levels in well 1 in Porter County, Indiana,
in feet below measuring point.

Date	Water level	Date	Water level	Date	Water level
1935		1936		1936	
Oct. 16	51.58	Mar. 31	51.82	Aug. 15	57.35
Dec. 2	52.34	Apr. 16	51.72	Sept. 1	54.49
17	51.50	May 1	51.75	15	53.77
1936		15	51.22	Oct. 1	53.04
Jan. 2	51.32	June 1	51.60	Nov. 1	52.85
15	51.65	15	51.81	16	52.91
Feb. 2	51.58	July 3	52.62	30	52.29
15	51.83	15	52.82	Dec. 1	52.97
Mar. 1	51.62	Aug. 1	57.20	15	52.65
16	51.76				

Water levels in wells 2 and 3 in Porter County, Indiana,
in feet below measuring point.

Date	Porter 2	Porter 3	Date	Porter 2	Porter 3
1935			1936		
Oct. 18	15.8	17.5	Mar. 31	15.03	17.08
Nov. 15	15.5	17.7	Apr. 15	15.01	17.05
Dec. 2	14.03	17.08	May 1	14.08	17.
16	14.04	18.	15	15.01	17.01
1936			31	15.	17.02
Jan. 2	14.04	18.	June 15	15.	17.06
15	14.07	18.	July 1	15.	17.08
Feb. 3	15.01	18.02	15	15.2	18.02
15	15.02	18.03	Nov. 30	15.03	18.0
29	14.07	17.08	Dec. 16	14.	17.6
Mar. 15	15.	17.08			

Water levels in wells 4 and 5 in Porter County, Indiana,
in feet below measuring point.

Date	Porter 4	Porter 5	Date	Porter 4	Porter 5
1935			1936		
Oct. 15	3.1	44.2	June 4	3.7	43.9
31	3.67	44.07	20	3.95	44.05
Nov. 15	3.40	44.07	30	4.1	43.55
30	3.45	43.90	July 4	3.7	43.9
Dec. 14	3.47	43.95	15	4.45	44.0
31	3.57	43.95	31	4.70	44.2
1936			Aug. 15	4.70	44.0
Jan. 15	3.05	43.92	31	4.02	44.12
Feb. 1	3.66	44.01	Sept. 15	3.9	44.15
15	3.02	44.00	30	3.59	44.1
29	3.20	44.06	Oct. 15	3.5	44.12
Mar. 14	3.36	43.91	Nov. 2	3.15	43.9
Apr. 2	3.39	43.90	14	3.2	43.92
16	3.6	43.11	Dec. 1	3.6	44.22
May 2	2.6	44.0	15	3.7	44.16
19	3.5	44.1			

Pulaski County

Pulaski 1. Jasper-Pulaski State Game Preserve, in basement of custodian's house. Diameter 4 inches, depth 148.5 feet. Measuring point, top of casing, about 8 feet below land surface.

Pulaski 2. Jasper-Pulaski State Game Preserve, southeast corner of laying pen D-1. Diameter $1\frac{1}{4}$ inches, depth 9 feet. Measuring point, top of casing, about 2.5 feet above land surface.

Pulaski 3. Jasper-Pulaski State Game Preserve, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 6, near north boundary line of preserve. Diameter 6 inches, depth 160 feet. Measuring point, top of casing, about 3 feet above land surface.

Pulaski 4. Charles Alberding farm, about 50 feet south of road and Starke County line. Diameter 6 inches. Test well for oil. Measuring point, notch in top of casing, about flush with land surface.

Pulaski 5. James Wiley, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 29 N., R. 4 W. Diameter 4 inches, depth 22 feet. Measuring point, top of east side of casing, about 1 foot above the land surface.

The measurements in wells 1, 2, 3, and 4 were made by H. P. Cottingham, superintendent Jasper-Pulaski Game Preserve, and C. E. Paul, engineer at Jasper-Pulaski C.C.C. camp. Measurements in well 5 were made by the personnel of the C.C.C. camp near Monon.

Water levels in wells 1, 2, 2 and 4 in Pulaski County,
Indiana, in feet below measuring point.

Date	Pulaski 1	Pulaski 2	Pulaski 3	Pulaski 4
1935				
Dec. 1	7.31	4.53	9.75	6.42
16	7.16	4.25	8.56	5.98
1936				
Jan. 1	7.0	4.46	8.35	4.90
16	7.11	4.10	8.93	6.20
Dec. 2	6.62	3.65	8.58	5.71

Water levels in well 5 in Pulaski County, Indiana,
in feet below measuring point.

Date	Feet	Date	Feet	Date	Feet
1935		1936		1936	
Oct. 16	7.99	Feb. 29	4.61	Sept. 3	8.57
31	8.09	Mar. 16	4.90	15	8.41
Nov. 15	6.10	31	4.37	Oct. 3	8.05
30	6.08	Apr. 15	5.15	16	7.39
Dec. 16	5.64	30	4.80	31	6.31
31	6.22	May 15	5.70	Nov. 14	5.07
1936		June 15	7.35	Dec. 1	5.91
Jan. 15	5.29	July 15	8.20	15	6.32
Feb. 1	6.29	Aug. 3	8.48	31	3.94
15	6.52	17	8.68		

St. Joseph County

St. Joseph 1. Mishawaka Water and Light Department, at pumping plant, Mishawaka. Diameter 20 inches, depth 90 feet. Measuring point, top of casing, about 0.5 foot above land surface. Fluctuations of water level in this well are caused in part by the pumping of nearby wells. Measurements made by A. R. Klein, superintendent Water and Light Department, Mishawaka.

Water levels in well 1 in St. Joseph County, Indiana,
in feet below measuring point.

Date	Feet	Date	Feet	Date	Feet
1935		1936		1936	
Oct. 16	10.35	Mar. 1	9.42	July 17	13.33
Nov. 1	11.32	17	9.21	Aug. 3	11.75
16	9.04	Apr. 1	9.62	17	12.00
Dec. 3	9.46	16	9.28	Sept. 15	11.17
17	9.26	May 2	8.36	Oct. 1	10.62
1936		16	9.75	16	10.41
Jan. 2	9.08	June 1	11.25	Nov. 2	10.08
16	9.16	19	10.79	Dec. 2	10.58
Feb. 1	10.18	July 2	10.83	16	10.16
17	10.71				

Starke County

Starke 1. Joe Tomassi, Bass Lake State Hatchery, about 200 feet north of custodian's house. Diameter 6 inches, depth 180 feet. Measuring point, top of casing, flush with land surface.

Starke 2. S. A. Craigmile, Bass Lake State Hatchery. At mint still about $\frac{1}{4}$ mile northeast of owner's residence, at junction of State Roads 10 and 29. Diameter 6 inches, depth 85 feet. Measuring point, top of casing.

Starke 3. S. A. Craigmile, same location as Starke 2 on east side of road at second farmhouse north of Junction of roads 10 and 29. Diameter 2 inches, depth 40 feet. Measuring point, top of casing, about 2.5 feet above land surface.

Measurements in wells 1, 2, and 3 were made by the personnel of the Bass Lake State Hatchery.

Water levels in wells in Starke County, Indiana,
in feet below measuring point.

Date	Starke 1	Starke 2	Starke 3
1935			
Oct. 3	14.29	5.09	6.84
1936			
Nov. 5	14.5	3.1	4.8

Steuben County

Steuben 1. Pokagon State Park, near custodian's house on south side of area formerly used for buffalo pen. Diameter $1\frac{1}{4}$ inches, depth 14 feet. Measuring point, top of casing, about 2 feet above land surface.

Steuben 2. Pokagon State Park, on north side of area formerly used for buffalo pen. Diameter $1\frac{1}{4}$ inches, depth 20 feet. Measuring point, top of casing, about 2.75 feet above land surface.

Measurements in wells 1 and 2 were made by R. N. Sprague, custodian, Pokagon State Park.

Water levels in wells in Steuben County, Indiana,
in feet below measuring point.

Date	Steuben 1	Steuben 2
1935		
Sept. 16	6.25	8.75
1936		
Nov. 4	3.6	6.4

Tippecanoe County

Tippecanoe 2. Ben Connelly, NE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 24 N., R. 4 W. At residence. Dug well, depth 30 feet. Measuring point, south side of brick rim of well, about 0.5 foot above land surface.

Tippecanoe 3. Lafayette Loan & Trust Co., NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T. 24 N., R. 4 W. At residence of Hershell Byers. Diameter 12 inches, depth 20.5 feet. Measuring point, north edge of casing, slightly above land surface.

Measurements in wells 2 and 3 made by Arnold L. Watkins and others of the C.C.C. camp at Lafayette.

Water levels in wells in Tippecanoe County, Indiana,
in feet below measuring point.

Date	Tippecanoe 2	Tippecanoe 3	Date	Tippecanoe 2	Tippecanoe 3
1935			1936		
Oct. 15	26.10	10.10	Apr. 30	25.23	4.63
Nov. 1	26.30	10.50	May 15	23.18	5.08
15	26.49	6.0	June 1	24.53	6.53
Dec. 4	27.08	7.58	15	25.73	7.43
19	26.63	6.38	30	26.28	8.18
31	26.78	7.53	July 31	26.73	9.63
1936			Aug. 17	27.00	10.21
Jan. 15	26.48	4.08	Sept. 1	27.18	10.33
Feb. 3	26.38	6.68	16	27.28	7.68
17	26.18	6.58	Oct. 1	27.28	6.98
29	23.53	3.38	15	26.48	4.18
Mar. 16	24.53	4.03	Nov. 2	24.78	4.13
31	23.63	4.78	15	22.23	4.68
Apr. 15	24.68	5.98	Dec. 15	25.88	7.33

White County

White 1. Town of Monon, in basement of municipal building, diameter 8 inches, depth 200 (?) feet. Measuring point, top of casing, about 8 feet below land surface.

White 2. W. J. York, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 28 N., R. 3 W. At residence of Edward J. Kentnich near Monon. Diameter 3 inches, depth 21 feet. Measuring point, top of casing, about 3 feet above land surface.

Measurements in wells 1 and 2 made by Edward J. Kentnich.

Water levels in wells in White County, Indiana,
in feet below measuring point.

Date	White 1	White 2	Date	White 1	White 2
1935			1936		
Dec. 4	5.64	11.00	Mar. 18	4.60	7.90
26	5.00	11.00	Apr. 3	a	5.93
1936			18	a	5.40
Jan. 3	5.00	11.00	May 20	a	7.55
16	5.00	10.50	June 5	a	7.55
Feb. 2	4.90	10.30	July 10	5.57	10.60
13	4.80	10.30	Aug. 12	6.00	9.10
Mar. 2	3.73	7.90	Sept. 10	6.00	9.00

a Overflowing

IOWA AND MISSOURI

TARKIO CREEK AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel and G. A. LaRocque

The observation well program in the Tarkio Creek area ^{1/}was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service through P. C. Weichmann, project manager. Measurements were made in 16 wells about weekly during the year. A water-stage recorder was operated continuously on well 1, and another recorder was operated on other wells for short periods. Wells 1 and 2 were measured by a member of the Geological Survey, and the other wells were measured by members of the Soil Conservation Service. Approximately 800 measurements were made during the year ending December 31, 1936.

The measuring of well 8, whose record in 1935 appears in Water-Supply Paper 777, was discontinued in 1936. Wells 4 and 13, which are used for watering stock, are included in this report, but they are not used in computing average water levels. The average water levels given in the following table are not a continuation of those given in Water-Supply Paper 777 because well 8 has been stricken from the list of wells used in computing the averages. The recomputed averages for 1934-35 are given in the following table. All water-level measurements made since the beginning of the program except those of well 8 are given in this report, including the monthly measurements that were reported in Water-Supply Paper 777.

The water levels in the observation wells declined gradually during the very dry spring and summer of 1934, and in September and October they stood an average of about 1 foot lower than in May. Moderately abundant rains in the fall of 1934 produced some ground-water recharge, and at the end of the year the average of the water levels in the wells was nearly the same as in May, when measurements were begun. Very little rain or snow fell during the 5 months from December 1, 1934, to April 30, 1935, and the water levels remained nearly stationary. Heavy rainfall occurred in May and June 1935. Although in these months vegetation usually consumes considerable moisture that is stored in the soil and in the zone of saturation, the recharge was sufficient in May and June to cause the water table to rise by about the first of July to an

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 62-65, 1936.

average stage 4 feet higher than its winter stage. During the remainder of the growing season the precipitation was moderate and the water levels declined an average of slightly more than 2 feet. The water table remained nearly stationary during November and December 1935 and declined only moderately in January 1936.

A thaw occurred during February 1936, during which time very few measurements were made because of bad roads. However, from January 28 to March 10 the water levels in the wells rose an average of nearly 4 feet. The water levels then declined until April 22, when rainfall caused them to rise sharply. On May 12 the highest average stage in the period of record was reached--4.50 feet higher than on January 28, 1936, and nearly 6 feet higher than at the beginning of observations in the spring of 1934 or on January 1, 1935. The water levels then declined, with very few interruptions, for the remainder of 1936, which was characterized by drought. They reached an average stage on December 30, 1936, that was only about 0.6 foot higher than the average stage on January 1, 1935. Moderately heavy rains occurred in September, but very little water was added to the zone of saturation, because most of the water that seeped into the ground was consumed in supplying the deficit of soil moisture.

Wells in the Tarkio Creek area, in Page and Montgomery Counties,
Iowa, and Atchison County, Mo.

(The depth to the water level given in the next to last column is the depth below the measuring point on Jan. 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
1.	W. R. Marshall, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 66 N., R. 40 W.	29	12	17.53	27.53
2.	H. W. Klutas, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 66 N., R. 40 W.	21	12	10.73	20.73
3.	John Smith, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 68 N., R. 39 W.	39	48	32.63	42.63
4.	John Smith, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 68 N., R. 39 W.	50	12	38.22	48.22
5.	John Toft, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 68 N., R. 38 W.	..	12	16.20	26.20
6.	T. Slickerveer, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 69 N., R. 38 W.	50	12	8.74	a 18.74
7.	E. F. Holquist, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 11, T. 71 N., R. 38 W.	28	36	24.65	34.65
9.	Elmer Oakleaf, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 71 N., R. 37 W.	49	12	40.68	50.68
10.	R. Palmquist, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 70 N., R. 37 W.	40	12	26.94	36.94
11.	R. Palmquist, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 70 N., R. 37 W.	26	12	7.61	17.61

a 20.48 after March 15, 1935.

Wells in the Tarkio Creek area--Continued

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
12	Amil Windhorst, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 69 N., R. 37 W.	63	36	37.08	b 47.08
13	Amil Windhorst, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 69 N., R. 37 W.	58	12	25.75	35.75
14	Floyd Hoskins, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 68 N., R. 38 W.	33	36	29.24	39.24
15	Metropolitan Life Insurance Co., NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 67 N., R. 38 W.	29	12	10.18	20.18
16	Metropolitan Life Insurance Co., NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 67 N., R. 38 W.	18	36	15.90	25.90
17	Albert Nordholm, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 67 N., R. 38 W.	20	36	17.52	27.52

b 47.76 after March 20, 1935.

Water levels in wells in the Tarkio Creek area in Iowa and Missouri,
in feet above the arbitrary datum

Date	1	2	3	4	5	6	7	9	10
1934									
May 8	.....	10.53	10.89	.....	9.74	11.06	9.11	.....	.....
13-14	.....	10.50	10.87	.....	10.24	11.09	9.12	.....	.....
23-25	.....	10.35	10.75	.....	10.22	10.99	9.08	12.98	10.40
31	.....	10.14	10.68	.....	10.06	10.91	9.07	12.96	10.38
June 6	.....	9.98	10.62	.....	9.89	10.83	9.04	12.88	10.36
13	.....	9.76	10.59	.....	9.99	10.73	9.03	12.82	10.33
20	.....	9.53	10.54	.....	9.87	10.69	9.03	12.78	10.30
28	.....	9.15	10.46	.....	9.78	10.61	9.03	12.69	10.28
July 5	.....	8.72	10.41	.....	9.65	10.54	9.02	12.62	10.25
11	.....	8.58	10.37	.....	9.59	10.49	9.01	12.56	10.22
19	9.65	8.28	10.31	.....	9.44	10.41	9.00	12.40	10.20
25	.....	7.94	10.26	.....	9.33	10.34	8.98	12.22	10.17
27-28	9.55	7.84	10.23	.....	9.27	10.31	8.97	12.15	.....
Aug. 2	9.48	7.56	10.20	10.52	9.22	10.27	8.95	12.02	10.14
8	9.38	7.27	10.16	10.47	9.14	10.22	8.95	11.81	10.13
16	9.33	6.82	10.10	10.41	9.04	10.15	8.91	11.55	10.09
20	9.27	6.79	10.07	10.37	9.00	10.12	8.91	11.42	10.08
29	9.16	6.50	10.03	10.32	8.92	10.06	8.89	11.15	10.06
Sept. 5	9.14	6.63	9.99	10.29	9.01	10.06	8.88	11.00	10.03
12	9.06	6.41	9.95	10.24	8.89	10.05	8.85	10.80	10.01
19	8.97	6.26	9.91	10.20	8.85	10.04	8.88	10.61	9.99
28	9.01	6.76	9.88	10.16	9.16	10.05	8.90	10.53	9.97
Oct. 4	8.90	6.82	9.84	10.12	9.03	10.03	8.94	10.40	9.95
10	8.82	6.54	9.81	10.07	8.75	10.00	8.92	10.27	9.95
17	8.76	6.30	9.78	10.03	8.77	9.99	8.86	10.11	9.93
25	9.59	7.78	9.87	10.03	9.40	10.03	9.07	10.14	9.93
31	9.25	7.79	9.80	10.01	9.12	10.03	9.12	10.03	9.90
Nov. 8	9.33	8.04	9.77	9.97	9.41	10.03	9.25	9.92	9.89
14	9.18	7.94	9.74	9.94	9.18	9.99	9.27	9.81	9.90
21-23	9.54	8.42	9.73	9.93	9.23	10.01	9.35	9.94	9.91
Dec. 10-11	10.03	9.40	9.93	10.18	9.74	10.07	9.55	9.65	9.89
29	10.06	9.98	10.01	10.00	10.05	10.02	10.00	9.98	10.00
1935									
Jan. 4-5	9.98	10.02	9.99	10.02	9.81	9.94	10.00	10.06	10.01
14-15	9.96	10.15	9.80	9.87	9.88	9.84	9.92	10.04	10.04
22-24	10.04	10.34	9.73	9.86	9.56	9.78	9.89	10.17	10.04
29-Feb. 1	9.94	10.35	9.64	9.68	9.35	9.74	9.76	10.17	10.05
Feb. 5-6	9.91	10.41	9.64	9.81	9.26	9.73	9.72	10.10	10.04
12-13	9.85	10.48	9.61	9.80	9.18	.....	.....	10.50	10.03
19-21	9.94	10.49	9.56	9.72	9.36	9.64	9.55	9.77	10.08
25-28	9.84	10.50	9.52	9.70	9.14	9.90	9.50	9.87	10.03

Water levels in the Tarkio Creek area--Continued

	1	2	3	4	5	6	7	9	10
1935									
Mar. 4-6	10.42	10.69	9.51	9.67	9.17	....	....	9.68	10.05
11-13	10.70	10.75	9.48	9.66	9.98	....	....	9.83	10.10
18-21	10.17	10.82	9.49	9.72	9.99	....	....	9.85	10.14
25-28	10.08	10.80	9.44	9.59	9.15	....	....	9.73	10.13
Apr. 1-3	9.98	10.82	9.42	9.60	9.09	....	....	9.63	10.15
8-9	10.23	10.80	9.41	10.38	8.99	....	....	9.48	10.14
15-17	10.03	10.90	9.37	....	8.92	....	....	9.38	10.13
22-24	9.93	10.92	9.34	....	8.88	....	....	9.27	10.15
29-May 2	9.79	10.87	9.31	9.44	8.85	9.57	9.86	9.09	10.10
May 6-8	9.71	10.89	9.27	9.46	8.80	9.48	9.70	9.05	10.07
13-15	9.90	10.93	9.23	9.52	8.81	9.50	9.61	8.89	10.04
20-24	12.14	11.23	9.64	9.52	10.20	9.59	10.25	8.87	10.05
27-29	11.24	11.43	10.78	9.83	10.84	9.69	10.60	9.02	10.09
June 4-5	12.88	11.75	13.66	11.28	12.31	10.14	11.68	9.71	10.20
10-13	12.67	11.73	13.30	16.72	12.44	11.22	12.55	11.15	10.34
17-19	9.79	11.70	15.73	12.38	13.07	11.68	12.59	12.51	10.41
24-25	13.66	12.20	16.92	8.57	13.05	12.74	13.18	13.64	10.53
July 2-3	14.48	12.40	17.02	....	13.09	13.48	13.54	15.21	10.65
9-10	14.56	12.29	17.18	16.84	12.58	13.54	13.40	16.49	10.75
16-17	14.74	11.18	17.23	16.84	12.17	13.20	12.97	17.46	10.96
23-24	14.87	12.08	17.39	17.12	11.71	12.85	12.63	18.32	11.00
30-31	14.89	11.96	17.32	17.64	11.29	12.47	12.29	18.71	11.02
Aug. 6	14.83	11.87	17.32	18.01	10.89	12.07	12.09	18.89	11.02
13	14.64	11.74	17.09	17.42	10.32	....	11.74	18.73	11.01
19-20	14.61	11.63	16.95	17.67	9.76	11.34	11.51	18.52	10.90
26-27	14.33	11.61	16.59	17.40	9.24	11.10	11.26	18.03	10.99
Sept. 2-3	14.87	11.50	16.48	17.52	9.00	10.99	11.27	17.58	10.84
9-10	14.12	11.38	16.14	17.09	8.88	10.88	11.18	16.87	10.86
16-17	13.86	11.25	15.87	16.85	8.78	10.75	10.95	16.06	10.88
23-24	13.57	11.12	15.37	16.32	8.68	10.62	10.64	15.17	10.87
30-Oct. 1	13.62	11.16	15.11	15.99	8.57	10.51	10.51	14.42	10.94
Oct. 7-8	13.36	11.09	14.64	15.59	8.45	10.41	10.26	13.62	11.00
14-15	13.16	11.13	14.35	15.01	8.37	10.36	10.29	12.98	10.80
21-22	13.40	11.63	14.20	14.78	8.32	10.34	10.31	12.43	10.85
28-29	13.12	11.21	13.90	14.62	8.29	10.33	10.26	12.00	10.93
Nov. 4-5	14.39	11.61	14.63	14.64	8.30	....	10.36	11.68	10.93
11-12	13.42	11.09	15.43	14.53	8.99	....	10.46	11.33	11.00
18-19	13.50	11.55	15.16	15.03	8.95	10.86	11.40	11.31	11.12
25-26	13.27	11.49	14.54	14.78	8.92	10.77	....	11.25	11.11
Dec. 10	13.53	11.62	15.54	14.71	9.27	11.25	10.35	11.42	11.31
17	13.50	11.61	14.59	14.74	9.29	11.23	10.20	11.54	11.38
24	13.29	11.57	14.30	14.40	9.25	11.10	10.03	11.59	11.36
30-31	13.24	11.53	....	....	....	....	9.89	11.68	....
1936									
Jan. 2	....	....	13.97	14.62	9.32	10.99	....	....	11.47
6-7	12.67	11.62	13.92	14.07	9.23	10.77	9.78	11.71	11.39
13-14	13.22	11.47	13.74	14.38	9.27	10.77	9.79	11.83	11.44
21	12.99	11.24	13.40	13.97	9.21	....	....	....	11.43
27-30	12.86	11.08	12.90	13.72	8.16	....	....	....	....
Feb. 2-3	12.85	11.06	12.78	13.63	....	....	....	....	....
11	12.71	10.93	....	....	....	....	....	....	....
18	12.57	10.79	....	....	....	....	....	....	....
25-27	16.64	11.81	18.45	17.10	....	....	....	....	....
Mar. 9-12	16.28	12.55	23.22	25.56	13.43	16.52	13.65	18.78	12.04
16-19	16.24	12.27	21.63	24.41	12.64	15.88	13.37	18.25	12.13
23-26	16.64	12.16	20.86	23.49	12.40	15.62	13.36	18.00	12.25
30-Apr. 2	16.53	12.08	19.92	22.38	12.07	15.12	13.03	17.56	12.09
Apr. 6-9	16.52	11.91	19.19	21.13	11.91	14.88	12.61	17.15	12.07
15-16	16.61	11.90	18.50	20.03	11.71	14.59	12.18	16.73	11.89
20-23	16.55	11.88	17.84	19.47	11.64	14.37	11.73	16.24	11.90
27-30	16.66	11.90	18.94	19.84	12.08	14.44	11.47	16.00	12.00
May 4-6	18.53	11.94	18.50	20.44	13.18	16.96	11.68	15.65	12.06
11-13	19.84	12.23	20.61	20.88	14.32	15.97	12.45	16.57	12.05
18-20	18.69	12.48	19.83	21.18	14.05	15.97	12.73	17.94	12.30
25-27	18.57	12.30	19.48	21.08	13.59	15.51	12.37	19.73	12.40
June 1-3	18.57	12.32	19.55	20.90	12.11	14.91	11.90	19.15	12.30
8-10	19.01	12.33	19.07	20.61	13.11	15.21	12.87	19.97	12.30
17-19	18.66	12.17	18.94	20.63	12.82	14.70	12.81	20.58	12.42
22-24	18.34	12.12	18.42	20.03	12.43	14.13	11.96	20.53	12.22
July 1	18.07	11.99	18.30	19.88	12.09	13.59	11.43	20.55	12.15
8	18.75	11.86	17.79	19.36	11.76	13.02	10.93	20.05	....
15	17.42	11.82	17.36	13.99	11.42	12.53	10.55	19.51	11.99

Water levels in wells in the Tarkio Creek area--Continued

Date	1	2	3	4	5	6	7	9	10
1936									
July 22	17.16	11.62	16.87	17.77	11.06	.....	10.32	18.92	11.93
29	16.71	11.49	16.36	14.97	10.67	11.68	10.12	18.34	11.82
Aug. 5	16.45	11.35	15.88	16.77	10.34	11.40	9.89	18.14	12.20
12	16.12	11.13	15.56	14.07	10.05	11.17	9.77	17.43	11.69
19-21	15.65	10.97	15.08	12.30	9.70	10.98	9.65	16.98	11.65
26	15.34	10.85	14.88	.....	9.39	10.82	9.27	17.50	11.62
Sept. 2	15.05	10.67	15.60	15.56	9.14	10.66	9.47	16.00	11.56
9-10	14.94	10.72	15.33	14.93	8.99	10.72	9.57	15.59	11.52
16	15.24	10.73	14.10	14.39	8.85	10.83	9.85	16.93	11.43
23	14.56	10.75	13.81	14.48	8.81	10.86	9.87	16.56	11.34
30-Oct. 2	14.64	10.97	13.59	14.20	8.72	10.93	10.21	16.50	11.29
Oct. 7-10	14.52	11.03	13.59	13.77	8.83	11.06	10.43	15.17	11.25
14-16	14.20	11.10	13.23	13.55	8.84	11.08	10.30	17.33	11.25
20-23	14.07	11.03	12.92	13.46	8.65	10.98	10.19	17.18	11.22
27-30	13.89	11.01	12.86	13.54	8.56	10.94	10.14	16.93	11.20
Nov. 3-7	13.69	11.03	12.61	13.12	8.58	10.89	9.94	16.54	11.16
9-11	13.60	10.98	12.46	13.08	8.55	10.86	9.85	16.25	11.15
16-18	13.49	10.89	12.30	12.99	8.50	10.78	9.81	15.62	11.12
25-27	13.29	10.90	12.15	12.73	8.44	10.64	9.61	15.14	11.06
Dec. 2	13.16	10.89	11.94	12.58	8.41	10.64	9.60	15.14	11.20
9	13.02	10.88	11.79	12.47	8.36	10.55	9.53	14.22	11.16
16	12.87	10.87	11.54	12.03	8.32	10.46	9.43	13.68	11.11
22-23	12.79	10.85	11.35	11.86	8.26	10.37	9.32	13.14	11.05
30	.....	.....	11.33	11.91	8.25	10.32	9.35	12.90	11.06

Date	11	12	13	14	15	16	17	Average
1934								
May 8-10	.....	.....	.....	.....	10.87	9.74	9.52	.....
13-14	.....	.....	.....	.....	12.06	9.78	9.53	.....
23-25	9.98	.....	.....	.....	10.80	9.81	9.47	.....
31	9.96	.....	.....	.....	10.65	9.77	9.40	.....
June 6	9.93	.....	.....	.....	10.51	9.73	9.33	.....
13	9.88	.....	.....	.....	10.38	9.68	9.27	.....
20	9.86	.....	.....	.....	10.25	9.63	9.22	.....
28	9.82	.....	.....	.....	10.08	9.59	9.18	.....
July 5	9.79	.....	.....	.....	9.89	9.52	9.09	.....
11	9.77	.....	.....	.....	.....	9.49	.....	.....
19	9.68	.....	.....	.....	.....	9.41	.....	.....
25	9.57	.....	.....	.....	9.38	9.34	8.95	.....
27-28	.....	.....	.....	.....	9.32	9.31	8.92	.....
Aug. 1-2	9.42	9.20	9.57	8.43	9.16	9.27	8.98	9.44
8	9.27	9.02	9.50	8.40	8.98	9.20	8.82	9.33
16	9.06	8.82	9.49	8.36	8.80	9.12	8.76	9.22
20	8.97	8.72	9.52	8.34	.....	9.08	.....	.....
29	8.76	8.57	9.50	8.32	8.57	9.00	8.67	9.05
Sept. 5	8.58	8.54	9.54	8.30	8.54	9.02	8.77	9.03
12	8.42	8.49	9.59	8.27	8.44	8.95	8.75	8.95
19	8.29	8.49	9.56	8.21	8.38	8.97	8.65	8.89
28	8.18	8.52	9.84	8.27	8.48	8.85	8.94	8.97
Oct. 4	8.12	8.52	9.64	8.40	8.43	8.82	9.03	8.95
10	8.05	8.54	9.58	8.37	8.34	8.77	8.84	8.85
17	7.96	8.50	9.57	8.27	8.29	8.72	8.78	8.78
25	8.11	8.78	9.89	8.51	8.90	9.03	9.46	9.18
31	8.14	8.81	9.86	8.63	8.89	9.10	9.42	9.15
Nov. 8	8.36	8.97	9.91	8.74	8.93	9.18	9.46	9.24
14	8.56	9.01	9.87	8.74	8.88	9.17	9.43	9.19
21-23	8.86	9.11	9.93	8.73	9.43	9.25	9.55	9.36
Dec. 10-11	9.28	9.53	10.13	8.99	9.78	9.98	9.96	9.70
29	10.01	9.98	10.00	9.99	10.13	10.02	10.02	10.02
1935								
Jan. 4-5	9.96	10.08	9.99	10.03	9.91	9.90	10.07	10.00
14-15	9.96	10.25	10.03	9.84	9.80	9.86	9.87	9.94
22-24	9.90	10.30	10.03	9.64	10.05	9.85	9.93	9.94
29-Feb. 1	9.89	10.26	9.12	9.39	9.68	8.30	9.86	9.74
Feb. 5-6	9.92	10.21	9.44	9.24	9.71	8.63	9.81	9.74
12-13	9.94	10.09	9.92	9.00	9.67	9.07	9.67	9.76
19-21	9.96	10.06	9.99	9.10	9.77	9.41	9.66	9.74
25-28	10.17	10.11	10.30	8.73	9.66	9.54	9.52	9.70

Water levels in wells in the Tarkio Creek area--Continued

Date	11	12	13	14	15	16	17	Average
1935								
Mar. 4-6	10.59	.....	9.92	9.40	9.73	9.70	9.72	9.88
11-13	10.61	.....	9.09	10.80	9.75	9.68	9.82	10.13
18-21	10.44	.....	10.19	11.88	9.84	9.77	9.75	10.17
25-28	10.33	.....	10.29	11.94	9.83	9.72	9.65	10.07
Apr. 1-3	10.27	.....	10.35	11.79	9.74	9.69	9.54	10.01
8-9	10.19	.....	10.45	11.04	9.71	9.67	9.52	9.92
15-17	10.21	.....	7.64	10.57	9.69	9.60	9.43	9.84
22-24	10.18	.....	4.68	10.08	9.66	9.56	9.37	9.76
29-May 2	10.13	10.25	3.13	9.68	9.52	9.50	9.32	9.70
May 6-8	10.09	10.21	2.26	9.35	9.58	9.46	9.25	9.63
13-15	10.09	10.16	.....	9.05	9.57	9.45	9.22	9.61
20-24	10.50	10.49	3.21	9.85	10.82	10.07	9.88	10.26
27-29	10.60	10.82	8.98	10.76	10.85	8.61	9.90	10.45
June 4-5	11.01	12.00	8.85	12.92	13.49	12.20	11.34	11.81
10-13	11.00	12.64	11.03	14.25	12.75	13.54	11.39	12.21
17-19	11.13	13.14	11.41	14.62	13.16	13.82	11.26	12.47
24-25	11.19	13.61	11.73	15.08	13.80	14.47	11.17	13.08
July 2-3	11.31	14.01	9.42	15.60	13.47	14.68	11.03	13.56
9-10	11.27	14.11	11.50	16.01	13.24	14.12	11.00	13.61
16-17	11.13	14.11	12.20	16.34	12.66	13.48	10.97	13.47
23-24	10.98	14.08	12.32	16.60	12.25	12.85	10.80	13.46
30-31	10.82	13.98	12.41	16.59	11.87	12.32	10.80	13.31
Aug. 6	10.73	13.86	12.44	16.48	11.62	11.91	10.49	13.14
13	10.52	13.72	12.37	16.28	11.07	11.52	10.33	12.86
19-20	10.32	13.62	12.45	16.07	10.70	11.18	10.41	12.68
26-27	10.11	13.54	12.49	15.76	10.40	10.88	10.30	12.43
Sept. 2-3	9.92	13.67	11.94	15.52	10.33	10.66	10.27	12.35
9-10	9.73	13.88	12.50	16.19	10.08	10.46	10.17	12.19
16-17	9.65	13.88	11.95	14.88	9.93	10.28	10.08	11.80
23-24	9.41	13.78	.....	14.56	9.71	10.07	9.97	11.68
30-Oct. 1	9.48	13.67	7.34	14.30	9.64	9.92	9.92	11.55
Oct. 7-8	9.57	13.55	10.32	14.01	9.62	9.76	9.91	11.38
14-15	9.65	13.43	6.98	13.78	9.67	9.67	9.84	11.24
21-22	9.83	13.58	11.60	13.58	9.67	9.64	9.90	11.25
28-29	9.98	13.30	11.97	13.34	9.66	9.60	9.87	11.13
Nov. 4-5	10.18	13.36	12.10	13.22	10.00	9.72	10.40	11.43
11-12	10.31	13.39	12.03	13.20	9.82	9.86	10.12	11.42
18-19	10.46	13.08	12.08	13.04	9.78	9.85	10.02	11.43
25-26	10.52	13.36	12.12	12.88	9.69	9.81	9.92	11.38
Dec. 10	10.79	13.92	11.55	12.68	9.77	10.12	9.97	11.53
17	10.84	13.98	11.91	12.53	9.75	10.05	9.94	11.45
24	11.06	14.09	10.14	12.42	9.71	9.98	9.83	11.39
30-31	.....	.....	.....	.....	.....	.....	.....	.....
1936								
Jan. 2	10.83	14.18	10.81	12.22	9.97	9.88	9.84	11.30
6-7	10.76	14.22	10.97	12.10	9.63	8.83	9.77	11.17
13-14	10.80	14.16	10.65	12.01	9.69	9.81	9.78	11.27
21	10.75	14.19	10.30	11.83	9.67	9.74	9.47	11.31
27-30	.....	14.20	10.52	13.48	9.61	9.63	9.43	11.26
Feb. 2-6	.....	14.25	8.61	.....	9.59	9.58	9.39	.....
11-13	.....	.....	.....	.....	9.67	9.53	9.43	.....
18-19	.....	.....	.....	.....	9.59	9.35	9.32	.....
25-27	.....	14.80	11.11	.....	11.79	9.85	10.73	.....
Mar. 9-12	12.31	13.93	14.09	20.39	12.57	12.51	12.89	15.08
16-19	12.06	17.52	14.10	20.78	11.88	12.44	11.96	14.92
23-26	11.79	17.41	14.19	20.56	11.75	12.28	11.78	14.77
30-Apr. 2	11.49	17.35	13.49	20.37	11.52	11.98	11.31	14.46
Apr. 6-9	11.33	17.35	13.66	20.19	11.44	11.70	11.17	14.24
13-16	11.14	17.33	13.94	19.93	11.29	11.45	10.89	14.01
20-23	11.06	17.38	14.04	19.59	11.27	11.25	10.80	13.82
27-30	10.98	17.47	14.24	19.68	12.16	11.30	10.97	14.00
May 4-6	.....	17.58	14.36	21.12	13.27	13.44	12.54	14.77
11-13	11.46	18.11	14.36	21.68	14.88	15.48	15.07	15.76
18-20	11.47	18.48	14.56	22.19	14.21	16.75	13.39	15.68
25-27	11.38	18.73	14.66	22.24	13.70	16.89	12.48	15.66
June 1-3	11.15	18.85	14.47	22.10	13.17	16.54	11.92	15.31
8-10	11.07	19.10	14.57	21.91	13.65	17.19	12.46	15.66
17-19	10.94	19.18	14.47	21.73	13.42	17.22	12.07	15.54
22-24	10.86	19.11	11.55	21.44	12.98	16.49	11.63	15.19
July 1	10.79	18.82	10.47	21.15	12.57	15.70	11.57	14.91
8	10.67	18.31	9.86	20.73	12.22	14.64	11.13	14.80

Water levels in wells in the Tarkio Creek area--Continued

Date	11	12	13	14	15	16	17	Average
1936								
July 15	10.53	17.77	6.82	20.18	11.89	13.64	10.92	14.11
22	10.44	17.17	10.00	19.46	11.70	12.85	10.72	.....
29	10.34	16.61	10.65	18.61	11.43	12.28	10.49	13.35
Aug. 5	10.24	16.06	.....	17.65	11.27	11.73	10.41	13.05
12	10.10	15.55	9.38	16.15	11.09	11.32	10.27	12.67
19-21	9.85	15.12	8.80	16.40	10.82	11.10	10.14	12.43
26	9.61	14.68	8.35	15.74	10.67	10.80	9.99	12.23
Sept. 2	9.40	14.31	10.02	15.11	10.61	10.46	9.96	12.00
9-10	9.21	13.88	9.60	14.46	10.66	10.34	10.15	11.88
16	9.14	13.67	11.60	13.96	10.55	10.28	9.99	11.82
23	9.20	13.45	10.01	13.50	10.54	10.16	10.01	11.67
30-Oct. 2	9.38	13.37	8.82	13.05	10.52	10.07	9.98	11.66
Oct. 7-10	9.71	13.32	10.64	12.79	10.62	10.09	9.78	11.58
14-16	9.81	13.37	6.21	13.59	10.51	9.98	9.92	11.75
20-23	9.89	13.19	9.36	12.34	10.42	9.90	9.82	11.55
27-30	9.93	13.08	8.99	12.07	10.50	9.82	9.71	11.47
Nov. 3-7	9.97	12.97	8.29	11.86	10.44	9.75	9.74	11.37
9-11	10.04	12.85	4.95	11.65	10.51	9.64	9.73	11.29
16-18	10.06	12.63	0.52	11.39	10.46	9.60	9.77	11.17
25-27	10.06	12.47	-5.53	11.18	10.42	9.56	9.69	11.04
Dec. 2	10.09	12.33	-2.60	10.97	13.40	9.55	9.68	11.21
9	10.09	12.11	-0.43	10.76	10.39	9.47	9.63	10.86
16	10.10	11.86	3.20	10.58	10.37	9.40	9.59	10.72
22-23	10.09	11.61	3.33	10.58	10.30	9.35	9.50	10.61
30	10.31	11.47	4.43	10.26	10.60	9.34	9.51	10.59

KANSAS

LIMESTONE CREEK AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel and L. C. Crawford

The observation well program in the Limestone Creek area, Jewell County, Kans.,^{1/} was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service through R. P. Ramsey, project manager. Weekly measurements of water level were made in 40 wells, making a total of about 2,000 measurements during 1936. Automatic water-stage recorders were operated on 4 of the wells. The measurements were made by members of the Soil Conservation Service and the Geological Survey.

Monthly measurements of water level in 24 wells (2, 2a, 4, 6, 8, 12, 14, 16, 18, 22, 24, 25, 27, 28, 30, 31, 40, 41, 42, 44, 45, 48, 49, and 50) are given in Water-Supply Paper 777, and the measurements in all of these wells were used in computing the average water levels given in that report. Weekly water-level measurements in 40 wells are given in the present report, including the monthly measurements in all the wells that were included in Water-Supply Paper 777, except those in wells 2a, 16, 24, 27, and 31, as these wells have been discontinued. The measurements in 17 wells (2, 6, 8, 10, 12, 18, 22, 25, 28, 30, 40, 41, 42, 45, 48, 49, and 50) were used in computing the average water levels given in this report. The measurements given for wells 4, 14, 43, 44, 46, and 47 were not used in computing the averages because some of these wells were affected by pumping and in others the water-level fluctuations were somewhat erratic. Measurements in 13 wells (51 to 63, inclusive) near a pond on the L. C. Beeler farm, northwest of Ionia, and 4 wells (34, 34a, 34b, and 34c) near a pond on the farm of Glen Kindler, near Esbon, are also included in this report.

There appears to be a close correlation in this area between the water levels in the wells and the precipitation. The water levels decline during periods of light precipitation and rise during periods of moderate or heavy precipitation. The precipitation was considerably below normal from March 1934 to April 1935, and as a result the water levels in the wells declined persistently with minor exceptions from

^{1/} Water levels and artesian pressure in observation wells in the United States: U. S. Geol. Survey Water-Supply Paper 777, pp. 66-70, 1936.

the time the initial measurements were made in March, April, or May 1934, until the middle of May 1935. Heavy rains, amounting to 9.36 inches in May and 6.24 inches in June, caused an abrupt rise of the water levels that averaged 2.0 feet from May 20 to July 4. There was only 0.39 inch of rainfall in July and practically no rain during the first half of August, which resulted in a gradual decline of the water levels during this period. The rainfall in August amounted to 7.20 inches, practically all of which fell in the last half of the month, and about 2 inches of rain fell in the first part of September. As a result of this rainfall the water levels rose an average of about 1.5 feet. Light rainfall during the later part of September and October was accompanied by an average decline of about 0.5 foot in the water levels. The water levels gradually rose after the end of the growing season although rainfall was light, and the average water level in the wells at the end of 1935 stood about 3.75 feet higher than at the beginning of the year, and about 2 feet higher than in the spring of 1934, when observations were begun.

There was very little change in stage of the water levels from January to April 1936. A small decline occurred during April, but this decline was followed by a rise of about 0.3 foot that carried the water levels on May 15 to the highest average stage observed during the period of record. The water levels then declined about 2.5 feet by October 1, changed only slightly during October, November, and December, and on December 31 stood 2.36 feet lower than on January 1, 1936, 1.49 feet higher than on January 1, 1935, and about 1 foot higher than the average stage when measurements were begun.

Beeler Pond wells

Thirteen wells (51 to 63) surround a pond on the L. C. Beeler farm northwest of Ionia. Six wells (52 to 57) are located along an east-west line about 75 feet above the dam. Well 54 is near the east edge of the pond; wells 53 and 52 are 50 and 100 feet, respectively, east of 54; well 55 is near the west edge of the pond; and wells 56 and 57 are 50 and 100 feet, respectively, west of 55. Well 58 is 125 feet north of 57, well 60 is 110 feet north of 52, and well 59 is about 100 feet north on a line that bisects perpendicularly the line connecting wells 58 and 60. Well 51 is 65 feet south of the overflow, well 61 is 210 feet south and thence 250 feet east of well 51, well 63 is 210 feet south and thence 90 feet west of well 51, and well 62 is 400 feet south and thence 110 feet east of well 51.

Weekly measurements have been made on these wells since September 1934. Well 51 is equipped with an automatic water-stage recorder. The water levels are expressed in relation to the zero level of a staff gage, to which was assigned an arbitrary height of 100 feet.

The water level of the pond stood at a higher stage at the beginning of the measurements than the water levels in any of the wells and maintained a higher stage until the middle of August 1936. At this time the water level in well 59 rose to a higher stage than the pond level and remained slightly higher until October. Although the water level in the well declined below the level of the pond in October, there were times in November and December when the water level in the well rose above the pond level.

From the beginning of the measurements until December 15, 1934, the water table sloped away from the pond to the west, as indicated by the water levels in wells 55, 56, and 57. However, the slope of the water table away from the pond along this line of wells gradually decreased until on January 12, 1935, the gradient was reversed, and the water table sloped from well 57 to well 55. However, the pond level at this time still was higher than the water level in well 55, hence water was apparently moving to the south out of the area in a ground-water valley between the pond and the well.

Heavy rainfall in May and June 1935 rapidly raised the pond level, after which it declined. The water level in well 55 rose until July 5 and then declined. The water level in well 56 rose until July 26, whereas the pond level and the water level in well 55 declined during the later part of this period. Well 57 rose until August 16. Hence, the water level in well 57 rose for six weeks after July 5, during which time the water level in well 55 was declining. Under conditions of equilibrium there is a rather definite relation between the water level in the pond and nearby wells. The water level in the pond is generally about 4.5 feet higher than the water level in well 55. When the difference in stage between the water levels in the pond and the well becomes greater than the difference should be under conditions of equilibrium, the water level in the well rises until the two water levels are again in equilibrium, even though the pond level may be declining at the time. A similar relation holds between the stages of the water levels in wells 55 and 56 and also in wells 56 and 57.

Kindler Pond wells

Four wells surround a pond on the farm of Glen Kindler. The pond is 2.5 miles south and thence 3.5 miles west of Esbon. Well 34 is 220 feet south of the east spillway, well 34B is 60 feet north of the east spillway, well 34A is 240 feet west and thence 70 feet south of well 34B, and well 34C is 400 feet north and thence 10 feet west of well 34A.

Measurements of the water levels were begun in well 34 in May 1934 and in the other three wells in November 1934. The water levels are expressed in relation to the zero level of the staff gage to which is given an arbitrary height of 100 feet.

Wells in the Limestone Creek area in Jewell County, Kans.

(The depth to the water level given in the next to last column is the depth below the measuring point on Jan. 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
2	E. E. Lewis, NE $\frac{1}{4}$ NE $\frac{1}{4}$ lot 1, sec. 6, T. 3 S., R. 9 W.	71	...	46.25	56.25
4	S. B. Brown, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 3 S., R. 9 W.	53	...	48.58	58.58
6	H. C. Doud, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 3 S., R. 9 W.	50	...	45.73	55.73
8	Frank Zadina, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 3 S., R. 9 W.	75	...	68.03	78.03
10	Guy Ortman, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 3 S., R. 9 W.	..	...	25.54	35.54
12	M. W. Howe, lot 4, sec. 30, T. 3 S., R. 9 W.	88	...	77.00	87.00
14	C. Walker, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 3 S., R. 9 W.	53	...	46.48	56.48
18	Martin Johaneck, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 3 S., R. 9 W.	45	...	31.88	41.88
22	Meyer Miles, NE $\frac{1}{4}$ sec. 10, T. 5 S., R. 9 W.	39	...	28.16	38.16
25	J. N. Sorrell, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 5 S., R. 9 W.	31	...	16.47	26.47
28	Darius Henningsen, lot 16, sec. 31, T. 3 S., R. 9 W.	42	...	40.14	50.14
30	Fred Van Wey, SW $\frac{1}{4}$ sec. 28, T. 4 S., R. 9 W.	50	...	42.54	52.54
34	Glen Kindler, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 3 S., R. 10 W.	36	48	31.60	112.16
34A	Glen Kindler, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 3 S., R. 10 W.	55	1.5	36.27	128.62
34B	Glen Kindler, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 3 S., R. 10 W.	50	1.5	35.65	124.28
34C	Glen Kindler, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 3 S., R. 10 W.	47	1.5	31.01	125.44
40	R. L. McDaniel, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 15, T. 4 S., R. 9 W.	45	32	43.48	53.48
41	Walter Dietz, SW $\frac{1}{4}$ sec. 6, T. 5 S., R. 9 W.	24	8	27.57	37.57
42	L. Lowdermilk, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 6 S., R. 9 W.	36	48	31.36	41.36
43	B. Branagan, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T. 5 S., R. 9 W.	24	12	17.32	27.32

Wells in the Limestone Creek area in Jewell County, Kans.--Continued

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
44	Everett Gimple, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 4 S., R. 9 W.	37	6	23.96	33.96
45	Victor Yapp, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 4 S., R. 10 W.	38	12	31.93	41.93
46	Ralph Wierengo, lot 3, sec. 19, T. 5 S., R. 9 W.	28	7.5	18.76	28.76
47	Meyer Miles, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 5 S., R. 9 W.	17	7.5	14.77	24.77
48	Frank Rogers, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 4 S., R. 10 W.	39	8	28.06	38.06
49	E. Underwood, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 3 S., R. 9 W.	57	12	41.60	51.60
50	S. Strom, SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 3 S., R. 9 W.	50	8	36.62	46.62
51	L. C. Beeler farm: NE $\frac{1}{4}$ sec. 17, T. 4 S., R. 9 W.	30	7	10.93	a 104.52
52	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	34	1.5	22.50	118.24
53	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	33	1.5	21.20	116.92
54	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	21	1.5	18.30	114.25
55	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	30	1.5	17.78	114.24
56	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	35	1.5	20.70	117.25
57	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	44	1.5	26.23	122.70
58	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	44	1.5	27.98	122.75
59	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	32	1.5	21.87	119.92
60	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 4 S., R. 9 W.	45	1.5	22.89	120.74
61	NE $\frac{1}{4}$ sec. 17, T. 4 S., R. 9 W.	34	1.5	24.16	108.66
62	NE $\frac{1}{4}$ sec. 17, T. 4 S., R. 9 W.	30	1.5	13.22	97.56
63	NE $\frac{1}{4}$ sec. 17, T. 4 S., R. 9 W.	39	1.5	20.81	110.08

a 104.29 to Feb. 1, 1936.

Description of benchmarks

(Unless otherwise indicated, benchmarks are copper nails and washers stamped with the letters U.S.G.S. The height of the benchmark is its height with reference to the arbitrary datum.)

Well no.	Height (feet)	Location
2	55.65	E. side of 8-inch mulberry tree, 4 feet above land surface, 150 feet N. of well.
4	59.41	N.W. corner of barn, 10 inches above land surface, 12 feet E. of well.
6	54.08	In crotch of 8-inch mulberry tree along fence, 80 feet E. and 160 feet S. of well.
8	75.47	In 8-inch post, 230 feet W. of well.
10	36.34	In 8-inch walnut tree, 3 $\frac{1}{2}$ inches above land surface, 140 feet S. and thence 10 feet E. of well.
12	88.44	In 6-inch hedge tree, 15 inches above land surface, 45 feet NW. of well.
14	66.59	In 10-inch boxelder tree 200 feet S. of well.
18	40.37	In crotch of cherry tree S. of well.

Description of benchmarks--Continued

Well no.	Height (feet)	Location
22	32.07	In 15-inch elm tree, 90 feet N. and thence 30 feet E. of well.
24	21.53	In root of 24-inch Cottonwood tree, 500 feet S. and thence 100 feet W. of well.
25	28.76	In 15-inch Cottonwood tree, 210 feet N. and thence 40 feet E. of well.
28	52.58	-
30	48.09	-
31	56.31	-
34	110.86	In root of 24-inch Cottonwood tree, 40 feet S. of well 34.
34a	110.86	In root of 24-inch Cottonwood tree, 40 feet S. of well 34.
34b	110.86	In root of 24-inch Cottonwood tree, 40 feet S. of well 34.
34c	110.86	In root of 24-inch Cottonwood tree, 40 feet S. of well 34.
36	65.54	-
40	55.35	-
41	39.68	In root of 24-inch Cottonwood tree, 300 feet N. and thence 70 feet E. of well.
42	40.17	-
43	26.03	In 18-inch willow tree, 200 feet S. and thence 30 feet E. of well.
44	39.89	-
45	38.72	-
46	24.25	In 8-inch tree 65 feet SE. of well.
47	25.08	Cross on N. end of concrete culvert, 270 feet S. and thence 30 feet E. of well.
48	33.36	In root of 18-inch elm tree, in fence corner, 120 feet SE. of well.
49	51.62	In 18-inch boxelder tree, 100 feet N. of well.
50	47.24	-
51-63	110.90	In corner fence post, 265 feet E. and 15 feet S. of well 51.

Water levels in wells in the Limestone Creek area in
Jewell County, Kans., in feet above the arbitrary datum

Date	2	4	6	8	10	12	14	18
1934								
Mar. 19-21	12.56	10.83	12.43	12.91	7.18	12.56	8.79	11.91
May 7-9	10.93	12.86	11.30	11.98	6.71	12.16	10.10	12.36
23-26	10.87	12.72	11.25	11.68	5.99	12.02	9.20	12.07
May 31-June 1	9.97	12.63	11.17	11.67	5.39	11.96	9.23	11.82
July 3-4	10.75	12.33	11.07	11.06	4.00	11.68	9.46	10.98
16-19	10.72	12.23	10.96	10.82	3.91	11.53	9.58	10.69
25-28	10.53	a 7.29	10.91	10.68	3.78	11.46	9.58	10.37
Aug. 2-4	10.60	9.32	.....	.....	.....	11.40	9.63	.....
6-7	.....	.....	10.83	10.81	3.46	11.34	.....	10.28
9-10	10.54	10.48	10.81	10.76	3.36	11.06	9.47	10.23
15-17	10.58	9.58	10.73	10.68	3.14	11.00	9.50	10.17
22-23	10.59	b 7.25	10.64	8.02	2.08	10.96	9.52	9.84
29-31	10.58	8.60	10.59	8.65	11.37	10.30	9.55	.....
Sept. 6-7	10.36	10.08	10.53	9.24	13.84	10.83	9.61	9.94
12-14	10.53	9.93	10.50	9.56	14.84	10.79	9.63	9.96
20-21	10.45	10.35	10.45	9.76	15.99	10.74	9.65	9.94
27-28	10.34	10.53	10.41	9.88	16.19	10.70	9.69	9.88
Oct. 4-5	10.37	10.60	10.37	9.96	15.96	10.65	9.72	9.86
11-12	10.28	10.62	10.32	10.01	15.51	10.60	9.76	9.83
18-19	10.05	10.62	10.27	10.05	14.71	10.53	9.78	9.84
24-27	10.07	10.61	10.25	10.08	13.88	10.49	9.81	.....
Nov. 1-3	10.14	10.55	10.20	10.10	13.21	10.43	9.83	9.77
8-10	10.09	10.52	10.18	10.12	12.73	10.38	9.85	9.84
15-17	10.06	10.45	10.15	10.10	12.26	10.33	9.87	b 9.90
21-24	10.16	10.45	10.11	10.12	11.83	10.28	9.91	.....

a well used for watering stock

b well cleaned and bailed

Water levels in wells in the Limestone Creek area--Continued

Date	2	4	6	8	10	12	14	18
1934								
Nov. 28	10.17	10.41	10.10	10.12	11.47	10.24	9.92	9.90
Dec. 6	10.09	10.42	10.07	10.09	11.04	10.18	9.94	9.94
13	10.03	10.24	10.05	10.07	10.67	10.14	9.96	9.97
20	10.21	10.18	10.04	10.05	10.46	10.09	9.98	10.00
27	10.16	10.13	10.01	10.02	9.20	10.05	9.99	10.00
1935								
Jan. 1	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
3	9.90	10.08	9.99	9.99	9.92	9.98	10.00	10.00
10	10.09	10.01	9.98	9.96	9.77	9.94	10.01	10.02
17	9.92	9.96	9.97	9.92	9.53	9.90	10.02	10.01
24	9.84	9.90	9.94	9.86	9.35	9.86	10.03	10.01
31-Feb. 2	9.82	9.81	9.88	9.80	9.19	9.81	10.04	9.97
Feb. 7-9	9.87	9.76	9.88	9.74	8.97	9.76	10.05	9.84
14-16	10.01	9.71	9.89	9.70	8.80	9.73	10.05	9.99
19-23	b 9.66	9.67	9.87	9.65	8.60	9.68	10.06	9.98
28	.....	.....	.....	.....	.....	.....	.....	9.90
Mar. 2	9.67	.....	9.84	9.59	8.43	9.65	10.05	.....
7-9	9.70	9.66	9.83	9.53	8.30	9.60	10.07	9.89
14-16	9.50	9.62	9.84	9.49	8.52	9.56	10.07	9.95
21-23	9.48	9.55	9.79	9.52	8.35	9.52	10.07	9.91
28-30	9.47	9.52	9.79	9.38	8.31	9.46	10.07	9.95
Apr. 6	9.51	9.42	9.81	9.31	8.20	9.40	10.09	9.94
11-13	9.45	9.40	9.72	9.26	7.98	9.38	10.09	9.93
18-20	9.35	9.33	9.68	9.19	7.91	9.32	10.09	9.93
25-27	9.25	9.29	9.68	9.16	7.79	9.28	10.10	9.93
May 2-4	9.06	9.24	9.66	9.10	7.56	9.25	10.10	9.51
9-11	9.28	9.15	9.62	9.03	7.35	9.20	10.10	9.92
16-19	9.23	9.09	9.58	8.98	7.14	9.15	10.11	9.91
23-24	9.04	9.06	9.57	8.95	11.36	9.13	10.13	9.84
30-31	.....	9.07	9.56	8.92	15.37	9.16	10.22	10.08
June 4-7	8.99	9.07	9.63	8.90	.....	9.15	10.19	10.30
13-14	9.14	9.18	9.69	8.92	16.86	9.25	10.20	10.38
20-21	9.07	9.47	9.70	8.93	16.78	9.67	10.24	10.58
27-28	9.18	9.86	9.70	8.94	16.86	10.17	10.25	10.69
July 1	9.26	.....	.....	.....	.....	.....	.....	.....
4-5	9.38	10.57	9.69	8.97	16.96	10.61	10.28	11.00
11-12	9.56	12.62	9.69	9.08	16.47	11.03	10.30	11.15
18-19	9.70	13.03	9.65	9.20	15.86	11.35	10.30	11.08
25-27	9.89	13.55	9.64	9.37	15.14	11.64	10.30	11.00
Aug. 1-2	10.10	14.42	9.63	9.65	14.30	11.84	10.32	10.86
8-9	10.06	15.14	9.62	9.99	13.46	12.00	10.32	10.70
15-16	10.18	15.02	9.62	10.33	12.76	12.10	10.33	10.54
22-23	10.08	15.10	9.62	10.71	12.17	12.20	10.33	10.35
29-31	10.13	15.23	9.66	11.10	13.23	12.29	10.34	10.33
Sept. 5-6	10.17	15.14	9.70	11.52	15.25	12.40	10.35	10.79
12-13	10.24	15.14	9.77	12.07	16.81	12.87	10.37	11.32
18-20	10.24	15.16	9.81	14.50	16.91	13.25	10.38	11.71
26-27	10.11	15.05	9.85	15.04	16.50	13.65	10.40	11.85
Oct. 3-4	10.28	15.04	9.85	15.21	16.05	13.81	10.39	12.00
10-11	10.18	15.01	9.86	15.40	15.69	13.97	10.40	12.16
17-18	10.18	14.98	9.88	15.63	15.39	14.05	10.40	12.32
24-26	10.15	14.90	9.87	15.84	15.23	14.14	10.41	12.49
31-Nov. 1	10.28	14.94	9.89	16.11	15.24	14.19	10.44	12.67
Nov. 7-8	10.31	14.96	9.90	16.38	15.27	14.20	10.42	12.90
14-15	10.20	14.86	9.88	16.64	15.13	14.20	10.43	13.04
21-22	10.30	14.86	9.89	16.89	15.00	14.20	10.44	13.27
29	10.26	14.88	9.87	17.15	14.90	14.18	10.45	13.50
Dec. 5-6	10.32	14.72	9.85	17.30	14.76	14.14	10.46	13.68
12-13	10.39	14.78	9.86	17.57	14.50	14.09	10.46	13.87
19-20	10.15	14.71	9.85	17.69	14.22	14.00	10.49	13.94
26-27	10.11	14.56	9.80	17.79	14.06	13.94	10.46	14.09
1936								
Jan. 2-3	10.39	14.63	9.80	17.93	13.90	13.83	10.47	14.29
9-10	10.32	14.61	9.79	18.03	.....	13.76	10.46	14.42
16-17	10.28	a 13.38	9.78	18.12	.....	13.67	10.47	14.53
23-24	10.12	a 11.08	9.73	18.16	13.24	13.60	10.46	14.63
30-31	10.19	a 9.62	9.71	18.17	13.10	13.48	10.45	14.75
Feb. 6-7	10.22	a 8.16	10.51	18.19	12.94	13.49	10.44	14.85
13-14	10.43	a 8.35	9.95	18.23	12.86	13.34	10.43	15.01

a well used for watering stock

b well cleaned and bailed

Water levels in wells in the Limestone Creek area--Continued

Date	2	4	6	8	10	12	14	18
1936								
Feb. 20-21	10.20	a 7.78	9.73	18.21	12.65	13.26	10.43	15.10
27-28	10.12	a 6.55	9.61	18.23	12.52	13.17	10.44	15.03
Mar. 5-6	10.05	6.61	9.57	18.20	12.37	13.14	10.43	15.04
12-13	10.10	8.02	9.55	18.20	12.33	13.09	10.43	15.08
19-20	10.06	7.58	9.54	19.18	12.17	13.07	10.43	15.06
26	10.35	6.09	9.54	19.17	12.07	13.07	10.43	15.11
Apr. 2-3	10.85	5.88	9.49	18.12	11.92	13.05	10.43	15.03
9-10	10.08	5.88	9.48	18.05	11.88	13.04	10.41	15.05
16-17	9.88	7.10	9.45	17.98	11.72	13.01	10.41	15.01
23-24	9.97	8.04	9.43	17.91	11.71	12.99	10.43	15.00
30-May 1	10.05	10.00	9.40	17.87	11.59	12.95	10.42	14.98
May 7-8	10.02	9.78	9.39	17.82	12.41	12.91	10.23	14.94
14-15	9.80	10.41	9.35	17.75	13.12	12.88	10.44	14.87
21-22	9.88	10.61	9.34	17.70	13.82	12.83	10.44	14.80
28-29	9.87	10.83	9.31	17.60	13.86	12.76	10.43	14.71
June 4-5	9.78	11.01	9.27	17.56	13.45	12.69	10.44	14.52
11-12	9.68	11.33	9.25	17.47	13.15	12.63	10.44	14.39
18-19	9.76	11.46	9.22	17.40	12.73	12.56	10.44	14.14
25-26	9.75	11.24	9.21	17.30	12.16	12.48	10.47	13.99
July 2-3	9.67	10.77	9.18	17.28	11.99	12.39	10.49	13.68
9-10	9.71	11.14	9.15	17.23	12.89	12.33	10.50	13.33
16-17	9.64	9.77	9.05	17.13	12.80	12.24	10.50	12.93
23-24	9.68	8.93	9.10	17.07	12.56	12.18	10.50	12.56
30-31	9.50	8.66	9.05	17.01	11.75	12.08	10.50	12.18
Aug. 6-7	9.57	9.33	9.04	16.93	11.20	11.96	10.49	12.90
13-14	9.62	9.87	9.02	16.88	10.79	11.88	10.51	11.68
20-21	9.58	10.17	9.00	16.83	10.32	11.77	10.51	11.40
27-28	9.53	10.40	8.96	16.78	9.93	11.68	10.52	11.16
Sept. 3-5	9.49	10.57	8.95	16.74	9.57	11.59	10.52	10.93
10-11	9.52	10.82	8.94	16.67	8.66	11.47	10.54	10.73
17-18	9.31	10.84	8.90	16.60	8.98	11.37	10.53	10.53
24-25	9.29	10.90	8.86	16.54	8.68	12.30	b	10.40
Oct. 1-2	9.28	11.03	8.88	16.50	8.49	11.22	10.26	10.31
8-9	9.35	10.99	8.84	17.46	8.51	11.12	10.26	10.18
15-16	9.41	10.93	8.85	16.41	8.11	11.06	10.27	10.07
22-23	9.14	10.12	8.83	17.38	7.93	10.99	10.26	9.94
29-30	9.25	10.30	8.84	16.33	7.87	10.90	10.25	9.89
Nov. 5-6	9.24	10.38	8.83	16.32	7.88	10.84	10.26	9.87
12-13	9.19	10.40	8.81	16.27	7.81	10.77	10.25	9.87
19-20	9.07	10.39	8.80	16.21	7.75	10.68	10.24	9.87
25-27	9.11	10.42	8.81	16.19	7.72	10.61	10.24	9.90
Dec. 3-4	9.14	10.42	8.81	16.17	7.65	10.52	10.23	9.93
10-11	9.01	10.42	8.81	16.14	7.63	10.45	10.23	9.96
17-18	9.10	10.41	8.82	16.11	7.61	10.39	10.22	9.98
24-25	9.08	10.41	8.80	16.08	7.63	10.40	10.22	9.96
31-Jan. 1	8.96	10.30	8.81	16.10	7.54	10.25	10.21	10.08

a well used for watering stock

b well cleaned and bailed

Date	22	25	28	30	40	41	42	43
1934								
Mar. 19-21	11.14	10.38	.....	.....	.....	.....	.....	.....
May 7-9	10.77	10.34	10.08	.....	.....	.....	.....	.....
23-26	10.52	10.11	10.92	13.84	10.26	.....	.....	.....
31-June 1	10.41	10.11	10.99	13.53	.....	.....	.....	.....
July 3-4	10.00	11.39	10.88	9.94	.....	.....	.....	.....
16-19	9.74	10.72	10.84	9.59	10.17	10.84	.....	.....
25-28	9.68	10.59	10.79	.....	10.09	10.75	10.99	.....
Aug. 2-4	9.59	10.43	10.75	9.20	10.17	10.59	10.83	11.72
6-7	.....	10.38	.....	.....	.....	.....	.....	.....
9-10	9.48	10.25	10.72	9.14	10.13	10.47	10.69	11.56
15-17	10.09	10.25	10.67	9.04	10.11	10.35	10.62	11.46
22-23	10.05	10.25	10.63	8.98	10.08	10.26	10.53	11.36
29-31	10.02	10.21	10.60	8.91	10.07	10.06	10.43	11.30
Sept. 6-7	9.98	.....	10.56	8.82	9.99	10.09	10.37	11.05
12-14	9.94	10.24	10.52	8.76	10.10	9.99	10.34	10.94
20-21	9.91	10.24	10.48	8.72	10.13	9.89	10.29	8.81
27-28	9.92	10.23	10.43	8.75	10.00	9.85	10.26	10.63

Water levels in wells in the Limestone Creek area--Continued

Date	22	25	28	30	40	41	42	43
1934								
Oct. 4-5	9.89	10.22	10.40	8.67	10.00	9.28	10.18	10.62
11-12	9.87	10.18	10.37	8.75	9.98	9.67	10.12	10.53
18-19	9.86	10.19	10.33	8.95	10.01	9.62	.....	10.46
24-27	9.86	9.75	10.29	9.17	10.05	9.57	10.04	10.39
Nov. 1-3	9.87	10.18	10.25	9.38	10.04	9.64	10.13	10.32
8-10	9.89	10.21	10.22	9.48	10.00	9.71	b	10.17
15-17	9.89	10.11	10.19	9.61	9.98	9.75	10.10	10.19
21-24	9.93	10.18	10.15	9.66	10.09	9.83	10.10	10.18
28-30	9.94	10.19	10.13	9.76	10.03	9.87	10.11	10.17
Dec. 6-8	9.96	10.09	10.10	9.83	9.90	9.90	10.07	10.10
13-15	9.98	10.03	10.07	9.90	9.97	9.92	10.09	10.07
20-22	10.01	10.05	10.05	9.91	10.07	9.98	10.07	10.08
27-29	10.02	10.02	10.02	9.93	10.01	9.98	10.04	10.04
1935								
Jan. 1	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
3-5	9.99	9.99	9.99	10.06	9.99	10.01	10.06	9.98
10-12	10.02	10.03	9.96	10.07	10.04	10.04	10.06	b 9.97
17-18	10.01	10.01	9.95	10.12	10.03	10.05	10.01	9.68
24	10.00	9.88	9.93	10.21	9.86	10.04	10.01	9.80
31-Feb. 2	9.99	9.78	9.90	.....	9.88	10.06	9.99	9.75
Feb. 7-9	9.99	9.75	9.87	b	10.00	10.07	10.00	9.75
14-16	10.02	9.82	9.84	10.35	b10.10	10.12	9.96	9.73
19-23	9.99	b 8.83	9.83	.....	10.04	10.10	10.01	9.69
28-Mar. 2	9.98	9.15	9.79	10.47	9.88	10.09	10.02	9.67
Mar. 7-9	9.96	9.41	9.77	10.46	9.97	10.09	10.04	9.67
14-16	10.00	9.49	9.68	10.57	9.92	10.12	9.96	9.67
21-23	9.96	9.54	9.64	10.54	9.99	10.10	9.95	9.67
28-30	9.94	9.59	9.62	10.61	9.94	10.10	9.96	9.76
Apr. 4-6	.....	9.53	9.62	10.61	9.94	10.13	9.98	9.24
11-13	.....	9.54	9.59	10.55	9.91	10.11	9.94	9.49
18-20	.....	9.49	9.56	10.67	9.98	10.10	9.94	9.50
25-27	.....	9.54	.....	10.70	10.04	10.11	9.90	9.50
May 2-4	.....	9.51	.....	10.58	10.04	10.00	9.87	9.49
9-11	9.72	9.43	9.50	10.65	9.80	10.02	9.76	9.43
16-19	9.79	9.39	9.65	10.61	9.84	9.94	9.97	9.49
23-24	10.62	9.52	9.53	11.29	9.88	10.05	10.98	13.21
30-31	11.16	9.55	9.44	12.00	9.85	10.39	12.48	.....
June 4-7	12.04	9.74	9.41	.....	9.87	11.41	14.81	18.28
13-14	12.24	9.95	9.44	11.80	9.88	11.33	14.46	19.22
20-21	12.42	10.70	9.45	11.76	9.91	11.77	15.62	19.90
27-28	12.38	.....	9.43	11.42	9.85	11.71	.....	19.37
July 1	.....	.....	.....	.....	.....	.....	.....	.....
4-5	12.32	11.09	11.08	11.72	9.80	12.42	14.83	17.55
11-12	11.43	11.38	9.96	11.25	9.85	12.25	14.29	16.83
18-19	11.80	11.46	9.62	11.05	9.82	12.05	14.00	16.32
25-27	12.63	11.54	9.50	10.80	9.86	11.83	13.79	15.91
Aug. 1-2	11.46	11.55	9.34	10.50	9.93	11.63	13.56	15.61
8-9	11.23	11.54	9.32	10.28	9.84	11.39	13.34	15.22
15-16	11.03	11.48	9.34	10.00	9.91	11.20	13.17	14.95
22-23	11.00	11.36	9.33	9.90	9.82	11.00	13.04	14.64
29-30	11.34	11.32	9.25	10.15	9.77	11.07	13.23	14.60
Sept. 5-6	12.06	11.65	12.41	11.90	9.82	13.48	14.83	15.30
12-13	12.51	12.07	10.90	12.12	9.85	13.95	14.69	15.13
18-20	12.58	12.39	10.40	11.81	9.85	13.77	14.20	14.90
26-27	12.52	12.48	10.56	11.61	9.79	13.50	13.91	14.67
Oct. 3-4	12.63	12.50	10.80	11.64	9.87	13.45	13.88	14.73
10-11	12.62	12.39	10.98	11.82	9.88	13.02	13.76	14.50
17-18	12.55	12.37	11.36	11.84	9.87	13.25	13.61	14.34
24-26	12.66	12.23	11.17	12.03	9.80	13.24	13.63	14.29
31-Nov. 1	12.66	12.21	11.35	11.95	9.91	13.27	13.61	14.15
Nov. 7-8	12.79	12.17	11.39	12.23	9.93	13.36	13.60	14.16
14-15	12.81	12.09	11.43	12.22	9.89	13.30	13.56	14.09
21-22	12.82	12.03	11.52	12.24	9.94	12.99	13.51	14.00
29	12.65	11.98	11.56	12.38	10.05	13.41	13.50	13.96
Dec. 5-6	13.02	11.84	11.57	12.57	10.02	13.24	13.50	13.98
12-13	13.09	11.87	11.65	12.69	10.07	13.53	13.52	13.93
19-20	13.09	11.74	11.59	12.73	9.96	13.40	13.39	13.75
26-27	13.15	11.65	11.59	12.86	9.94	13.43	13.39	13.71

b well cleaned and bailed

Water levels in wells in the Limestone Creek area--Continued

Date	22	25	28	30	40	41	42	43
1936								
Jan. 2-3	13.11	11.68	11.61	12.77	10.11	13.68	13.49	13.78
9-10	13.15	11.63	11.69	12.91	10.08	13.57	13.44	13.69
16-17	13.14	11.61	11.69	12.94	10.09	13.57	13.43	13.61
23-24	13.13	11.47	11.65	13.00	10.03	13.57	13.38	13.53
30-31	13.17	11.30	11.67	13.01	9.99	13.64	13.38	13.53
Feb. 6-7	13.21	11.28	11.82	13.09	9.98	13.66	13.38	13.49
13-14	13.18	11.24	11.75	13.09	10.24	13.85	13.48	13.53
20-21	13.12	11.13	11.70	13.01	10.08	13.72	13.39	13.41
27-28	13.13	11.12	11.68	13.13	10.12	13.69	13.38	13.33
Mar. 5-6	13.17	11.04	11.68	13.22	10.09	13.68	13.32	12.27
12-13	13.23	10.99	11.68	13.35	10.11	13.78	13.35	12.26
19-20	13.16	10.94	11.70	13.37	10.18	13.75	13.31	13.19
26	13.12	11.01	11.73	13.27	10.30	13.87	13.34	13.24
Apr. 2-3	13.16	10.87	11.63	13.30	10.08	13.79	13.25	13.13
9-10	13.11	10.75	11.66	13.41	10.14	13.88	13.31	13.15
16-17	13.11	10.66	11.62	13.46	10.10	13.81	13.21	13.04
23-24	13.13	10.57	11.63	13.58	10.13	14.00	13.29	13.08
30-May 1	13.14	10.54	11.68	13.48	10.19	14.00	13.25	13.04
May 7-8	13.49	10.67	12.34	13.53	10.30	13.99	13.23	13.34
14-15	13.87	10.94	13.01	13.70	10.04	14.03	13.97	13.65
21-22	13.62	11.32	12.04	13.40	10.11	14.01	13.57	13.77
28-29	13.54	11.54	11.80	13.29	10.08	14.04	13.44	13.79
June 4-5	13.51	11.72	11.69	13.23	10.09	13.87	13.23	13.68
11-12	13.34	11.79	11.70	12.88	10.01	13.81	13.12	13.65
18-19	14.17	11.85	11.68	12.45	10.10	13.68	13.01	13.62
25-26	13.01	11.82	11.63	12.21	10.04	13.45	12.86	13.54
July 2-3	12.78	11.86	11.66	11.92	10.06	12.88	12.78	13.39
9-10	12.56	11.84	11.65	11.63	10.06	12.96	12.64	13.32
16-17	12.37	11.81	11.61	11.36	10.02	12.75	12.48	13.24
23-24	12.22	11.81	11.60	10.10	10.04	12.57	12.36	13.19
30-31	12.07	11.77	11.52	10.81	9.93	12.35	12.19	13.08
Aug. 6-7	12.06	11.71	11.50	10.76	9.94	12.25	12.09	13.07
13-14	11.94	11.76	11.49	10.36	10.05	12.15	12.01	13.07
20-21	11.91	11.80	11.46	10.14	10.05	11.98	11.88	12.04
27-28	11.82	11.80	11.28	9.97	10.02	11.83	11.77	12.99
Sept. 3-5	11.82	11.77	11.34	9.82	10.07	11.71	11.64	12.95
10-11	11.92	11.78	11.29	9.69	9.96	11.66	11.66	12.95
17-18	11.96	11.76	11.19	9.59	9.87	11.49	11.57	12.87
24-25	12.00	.....	11.15	9.44	9.90	11.45	11.50	12.81
Oct. 1-2	12.21	11.71	11.09	9.89	9.87	11.47	11.78	12.94
8-9	12.43	11.85	11.01	9.95	9.90	11.47	11.74	13.00
15-16	12.45	11.97	10.91	9.86	9.93	11.46	11.68	12.94
22-23	12.49	12.04	10.89	10.03	9.88	11.40	11.59	12.81
29-30	12.64	11.99	10.84	10.31	9.87	11.57	11.61	12.82
Nov. 5-6	12.60	12.04	10.79	10.41	9.86	11.59	11.60	12.83
12-13	12.70	11.99	10.77	10.58	9.85	11.63	11.58	12.76
19-20	12.77	11.94	10.73	10.69	9.82	11.66	11.55	12.76
25-27	12.75	11.93	10.67	10.80	9.91	11.68	11.55	12.72
Dec. 3-4	12.74	11.92	10.64	10.83	9.95	11.71	11.56	12.67
10-11	12.80	11.93	10.61	10.94	9.87	11.73	11.51	12.63
17-18	12.85	11.90	10.58	10.99	9.88	11.79	11.54	12.63
24-25	12.92	11.87	10.57	11.12	9.87	11.78	11.52	12.61
31-Jan. 1	12.91	11.87	10.49	11.19	9.96	11.80	11.51	12.54

Date	44	45	46	47	48	49	50	Average
1934								
July 16-19	.....	.....	9.79	11.34	.....	.....	.....	.....
25-28	15.46	11.01	9.65	11.11	10.21	.....	.....	.....
Aug. 2-4	.....	.....	9.41	11.06	.....	.....	.....	.....
6-7	14.77	10.83	9.24	.....	9.96	.....	.....	.....
9-10	14.59	10.76	9.12	10.97	9.87	.....	.....	.....
15-17	14.25	10.65	8.98	10.93	9.73	.....	.....	.....
22-23	13.53	10.57	8.89	10.88	9.67	.....	.....	.....
29-31	13.22	10.47	8.82	10.87	9.48	13.75	10.83	10.38
Sept. 6-7	13.21	10.38	.....	10.70	9.45	13.68	10.71	10.53
12-14	12.87	10.31	9.15	10.50	9.34	13.63	10.61	10.58
20-21	12.86	10.23	9.11	10.47	9.24	13.49	10.51	10.61
27-28	12.77	10.18	9.12	10.49	9.20	13.35	10.42	10.58

Water levels in wells in the Limestone Creek area--Continued

Date	44	45	46	47	48	49	50	Average
1934								
Oct. 4-5	12.37	10.14	9.50	10.44	9.11	13.19	10.35	10.53
11-12	12.63	10.06	9.45	10.39	9.02	13.03	10.27	10.46
18-19	12.42	10.03	9.39	10.33	8.97	12.84	10.21	10.38
24-27	12.39	9.98	9.38	10.29	8.87	12.67	10.13	10.29
Nov. 1-3	12.39	9.96	9.40	.....	8.89	12.55	10.07	10.28
8-10	12.19	9.95	9.47	b10.27	8.94	b	10.05	10.12
15-17	b12.00	9.95	9.50	10.20	9.01	.....	10.01	10.09
21-24	11.69	9.93	9.55	10.16	9.06	3.07	9.99	10.10
28-Dec. 1	11.61	9.93	9.61	10.15	9.14	4.97	9.97	10.07
Dec. 6-8	10.62	9.94	9.90	10.12	9.26	6.50	9.97	10.03
13-15	10.64	9.96	9.95	10.08	9.47	8.03	9.97	10.02
20-22	10.44	9.98	9.98	10.04	9.79	9.06	9.99	10.04
27-29	10.48	10.00	9.99	10.00	9.97	9.76	10.00	9.96
1935								
Jan. 1	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
3-5	9.67	10.00	10.01	10.00	10.03	10.31	10.00	10.00
10-12	9.62	10.04	10.02	9.96	b10.33	10.68	10.01	10.05
17-19	9.35	10.06	10.03	9.98	10.39	10.94	b10.11	10.04
24-26	9.18	10.07	10.04	9.96	10.55	11.12	10.11	10.02
31-Feb. 2	8.93	10.08	10.06	9.91	10.59	11.19	10.14	9.99
Feb. 7-9	8.93	10.09	10.08	9.89	10.72	11.27	10.16	9.98
14-16	9.02	10.12	10.12	9.87	10.77	11.28	10.18	10.01
19-23	8.75	10.14	10.10	9.81	10.76	11.27	10.21	9.96
28-Mar. 2	8.65	10.16	10.11	9.82	10.92	11.33	10.25	9.93
Mar. 7-9	9.06	10.19	10.12	9.81	10.86	11.35	10.27	9.94
14-16	9.16	10.21	10.18	9.78	11.01	11.36	10.14	9.93
21-23	8.75	10.20	10.17	9.75	10.96	11.35	10.17	9.92
28-30	8.76	10.23	10.15	9.72	10.95	11.33	10.22	9.94
Apr. 4-6	8.86	10.23	10.19	9.70	10.95	11.28	10.26	9.90
11-13	8.80	10.25	10.17	9.65	10.88	11.25	10.26	9.86
18-20	8.69	10.25	10.17	9.63	10.97	11.20	10.28	9.85
25-27	8.63	10.17	10.17	9.60	11.01	11.16	10.31	9.84
May 2-4	8.53	10.28	10.12	9.53	10.88	11.10	10.25	9.76
9-11	8.43	10.27	10.06	9.48	10.82	11.04	10.35	9.75
16-19	8.89	10.25	(d)	9.52	10.80	10.97	10.33	9.74
23-24	10.07	10.60	.....	(e)	.....	10.97	10.33	10.15
30-31	11.37	12.58	.....	13.75	.....	11.42	10.88	10.81
June 4-7	12.44	12.68	(c)	15.47	13.53	14.61	11.59	11.42
13-14	12.72	12.73	14.67	(c)	13.43	20.31	11.89	11.86
20-21	12.97	13.19	15.21	16.40	13.69	23.19	12.21	12.27
27-28	12.64	13.24	14.33	15.90	13.60	24.81	12.37	12.36
July 4-5	12.88	13.73	13.87	15.86	13.63	b26.41	12.89	12.74
11-12	11.68	13.20	13.34	14.85	13.33	26.61	12.89	12.55
18-19	11.84	12.91	12.77	14.40	13.04	26.50	12.89	12.47
25-27	11.43	12.61	12.41	13.96	12.84	26.20	12.77	12.41
Aug. 1-2	10.76	12.32	12.12	13.66	12.68	25.88	12.62	12.23
8-9	9.32	12.04	11.79	13.27	12.33	25.47	12.37	12.06
15-16	9.21	11.74	11.53	13.03	12.13	25.04	12.23	11.93
22-23	9.84	11.53	11.35	12.90	11.94	24.66	12.04	11.81
29-31	10.55	11.59	13.95	18.45	12.04	24.64	12.11	11.96
Sept. 5-6	10.84	14.15	15.70	18.97	12.60	24.83	13.12	12.98
12-13	11.01	14.56	17.45	19.42	13.02	25.61	13.70	13.30
18-20	11.07	14.33	16.13	17.64	13.11	25.70	13.76	13.43
26-27	10.94	14.15	15.32	16.64	13.05	b25.43	13.70	13.37
Oct. 3-4	11.06	14.16	15.11	16.19	13.13	.....	13.82	13.42
10-11	11.04	14.15	15.01	15.78	13.20	.....	13.83	13.41
17-18	11.00	14.12	14.74	15.43	13.27	24.70	13.73	13.43
24-26	11.13	15.31	15.01	15.33	13.41	24.61	14.00	13.52
31-Nov. 1	11.28	14.40	14.93	15.19	13.60	24.69	14.07	13.53
Nov. 7-8	11.58	14.54	14.96	18.12	13.79	24.48	14.29	13.64
14-15	11.75	14.47	14.79	19.00	13.91	24.56	14.35	13.62
21-22	12.00	15.49	14.76	14.88	14.10	24.32	14.57	13.71
29	12.41	14.65	15.03	14.86	14.32	24.22	14.75	13.72
Dec. 5-6	12.78	13.54	15.63	18.97	14.51	24.19	15.02	13.71
12-13	13.13	13.61	15.50	18.94	14.66	24.14	15.15	13.78
19-20	13.25	13.59	15.24	18.64	14.65	24.00	15.16	13.71
26-27	12.60	13.68	15.08	.....	14.73	23.89	15.47	13.74

b Well cleaned and bailed.

c Well cleaned and cased.

d Well overflowed and caved.

e Well overflowed; cleaned and bailed.

Water levels in wells in the Limestone Creek area--Continued

Date	44	45	46	47	48	49	50	Average
1936								
Jan. 2-3	14.02	14.94	15.10	14.74	14.96	23.89	15.76	13.85
9-10	14.24	15.02	15.01	14.59	14.95	23.82	15.71	13.89
16-17	14.53	15.00	14.89	14.49	14.99	23.70	15.81	13.87
23-24	14.75	15.03	14.78	14.39	14.99	23.55	15.83	13.83
30-31	15.06	15.10	14.75	14.38	15.05	23.43	16.14	13.84
Feb. 6-7	15.34	15.16	14.68	14.35	15.06	23.37	16.32	13.91
13-14	15.77	15.05	14.74	14.38	15.18	23.45	16.58	13.94
20-21	15.89	15.09	14.58	14.17	15.03	23.15	16.58	13.83
27-28	16.15	15.11	14.47	14.12	14.98	22.97	16.73	13.81
Mar. 5-6	16.29	15.22	14.46	13.94	14.92	22.86	16.84	13.79
12-13	16.63	15.31	14.44	13.95	14.91	22.76	17.09	13.82
19-20	16.75	15.23	14.41	13.84	14.82	22.71	17.11	13.84
26	17.02	15.22	14.44	13.86	14.82	22.68	17.34	13.88
Apr. 2-3	17.20	15.13	14.26	13.74	14.61	22.44	17.49	13.77
9-10	17.51	15.25	14.31	13.72	14.58	22.34	17.79	13.75
16-17	17.47	15.20	14.17	13.61	14.39	22.00	17.85	13.67
23-24	17.91	15.33	14.23	13.60	14.36	21.83	18.06	13.70
30-May 1	17.99	15.31	14.21	13.64	14.24	21.84	18.12	13.68
May 7-8	17.55	15.33	15.92	17.32	14.21	21.76	18.21	13.79
14-15	17.89	15.46	17.01	19.38	14.28	21.85	18.40	13.96
21-22	17.67	15.53	15.99	17.76	14.24	22.15	18.46	13.93
28-29	17.25	15.38	15.63	17.13	14.09	22.07	18.48	13.87
June 4-5	17.01	15.04	15.18	16.57	13.87	21.76	18.24	13.73
11-12	16.51	15.13	14.92	16.19	13.84	22.56	18.22	13.70
18-19	16.48	14.78	14.55	15.78	13.73	21.31	17.96	13.56
25-26	16.28	14.38	14.10	15.38	13.51	20.84	17.61	13.31
July 2-3	16.14	13.92	13.71	14.94	13.28	20.45	17.17	13.11
9-10	15.18	13.56	13.41	14.67	13.10	20.28	16.79	13.04
16-17	15.34	13.18	13.22	14.44	12.85	20.08	16.37	12.86
23-24	15.07	12.83	13.61	14.26	12.73	19.83	15.95	12.70
30-31	14.61	12.53	13.27	13.99	12.52	19.60	15.52	12.49
Aug. 6-7	14.82	12.34	13.41	13.92	12.42	19.40	15.28	12.43
13-14	14.82	12.16	13.51	13.84	12.33	19.31	15.09	12.26
20-21	13.54	11.92	13.88	13.76	12.17	19.00	14.85	12.12
27-28	13.00	11.73	13.89	13.66	12.02	18.74	14.51	11.97
Sept. 3-5	13.46	11.53	13.89	13.49	11.86	18.41	14.26	11.85
10-11	14.01	11.41	14.07	13.56	11.76	18.18	14.15	11.73
17-18	13.95	11.24	14.83	13.40	11.60	17.86	13.92	11.63
24-25	14.61	11.12	13.72	13.27	11.50	17.65	13.78	11.61
Oct. 1-2	14.96	11.08	16.84	17.75	11.48	17.52	13.72	11.56
8-9	15.41	11.06	16.87	16.30	11.48	17.38	13.70	11.60
15-16	15.40	11.00	16.36	15.51	11.41	17.36	13.65	11.50
22-23	15.46	10.93	15.87	15.95	11.28	17.27	13.49	11.50
29-30	15.94	10.95	15.84	14.77	11.35	17.21	13.62	11.47
Nov. 5-6	15.45	10.99	15.77	14.67	11.41	17.17	13.72	11.48
12-13	15.99	11.02	15.60	14.49	11.47	17.11	13.78	11.48
19-20	16.29	11.00	15.50	14.41	11.57	17.01	13.83	11.47
25-27	16.35	11.09	15.47	14.36	11.68	16.98	13.89	11.48
Dec. 3-4	16.40	11.09	15.41	14.20	11.73	16.92	13.97	11.48
10-11	15.56	11.13	15.27	14.06	11.76	16.84	13.99	11.48
17-18	16.51	11.18	15.29	13.96	11.88	16.85	14.14	11.50
24-25	16.46	11.17	15.31	13.88	11.87	16.86	14.12	11.51
31-Jan. 1	16.48	11.22	15.14	14.24	11.94	16.63	14.19	11.49

Water levels in wells near Beeler pond

(Assumed height of zero level on pond staff gage, 100.00 feet)

Date	57	56	55	Pond staff gage	54	53	52
1934							
Sept. 26	.....	96.38	96.50	100.72	96.10	.....	96.19
28	96.03	96.65	96.97	100.70	96.38	95.81	95.69
Oct. 5	96.18	96.58	96.91	100.58	96.37	95.81	95.69
12	96.15	96.53	96.86	100.40	96.27	95.79	95.85
19	96.36	96.65	96.95	100.30	96.31	95.85	95.75
27	95.88	96.27	96.57	100.00	95.96	95.68	95.65
Nov. 3	96.64	96.80	97.01	.....	96.29	95.90	96.07
10	96.01	96.33	96.59	.....	96.00	95.70	95.52
17	96.45	96.67	96.82	.....	96.25	95.83	95.80
24	96.53	96.76	96.84	.....	96.37	95.83	96.29
Dec. 1	96.61	96.78	96.85	.....	96.29	95.86	95.88
8	96.33	96.53	96.62	.....	96.09	95.74	95.72
15	96.56	96.66	96.69	.....	96.15	95.79	95.85
22	96.61	96.69	96.63	.....	96.07	95.76	95.85
29	96.42	96.50	96.45	.....	95.93	95.71	95.71
1935							
Jan. 5	96.57	96.59	96.49	.....	95.97	95.73	95.81
12	96.76	96.73	96.53	.....	95.96	95.72	95.88
19	96.54	96.43	95.28	.....	95.74	95.60	95.66
26	96.28	96.29	96.11	.....	95.65	95.53	95.56
Feb. 2	96.14	96.16	95.92	.....	95.50	95.45	95.46
9	96.24	96.20	95.95	.....	95.47	95.45	95.50
16	96.19	96.11	95.85	.....	95.38	95.40	95.43
23	96.40	96.28	95.91	.....	95.43	95.42	95.54
Mar. 2	96.37	96.20	95.86	100.48	95.40	95.38	95.51
9	96.36	96.16	95.77	100.36	95.34	95.34	95.65
16	96.17	95.96	95.62	.....	95.19	95.22	95.29
23	96.03	95.83	95.49	100.00	95.12	95.14	95.15
30	96.11	95.86	95.57	.....	95.14	95.14	95.17
Apr. 6	96.17	95.97	95.66	.....	95.16	95.17	95.24
12	95.76	95.62	95.30	.....	94.94	94.99	95.24
19	95.92	95.74	95.43	.....	95.00	95.02	95.02
26	96.07	95.83	95.57	.....	95.06	95.06	95.06
May 3	95.53	95.46	95.28	.....	94.85	94.89	94.76
10	95.79	95.62	95.38	.....	94.93	94.92	94.86
17	95.79	95.68	95.45	.....	94.97	94.96	94.91
24	95.65	95.83	95.58	103.70	95.44	94.98	94.86
31	95.81	96.49	96.77	106.07	96.96	95.38	95.07
June 7	95.91	97.94	102.43	109.70	103.40	98.89	95.42
14	96.73	100.11	104.11	109.59	104.58	100.81	96.81
21	97.16	101.15	105.06	110.40	105.76	101.87	97.65
28	.....	102.20	105.55	110.40	106.32	102.85	98.75
July 5	98.75	102.79	105.68	110.20	.....	103.46	99.46
12	99.11	103.06	105.53	109.98	.....	103.81	100.00
19	99.68	103.30	105.39	109.69	.....	104.07	100.56
26	100.01	103.33	105.08	109.45	106.07	104.14	100.91
Aug. 2	100.40	103.28	104.96	109.10	105.86	104.15	101.25
9	100.40	103.10	104.44	108.90	105.65	104.11	101.40
16	100.64	102.94	104.10	108.60	105.52	104.07	101.60
23	100.52	102.76	103.96	108.30	105.50	104.08	101.68
31	100.70	102.90	104.22	111.80	105.72	104.30	101.93
Sept. 6	101.62	106.25	109.93	111.80	109.90	107.23	102.99
13	102.62	107.17	109.86	.....	110.10	107.83	103.96
20	102.92	107.19	108.87	111.80	109.11	107.46	104.33
27	102.85	106.72	107.88	111.65	108.35	106.99	104.33
Oct. 4	103.00	106.34	107.34	111.50	108.00	106.78	104.42
11	103.09	106.03	106.92	111.35	107.80	106.65	104.50
18	102.98	105.74	106.61	111.47	107.70	106.55	104.46
25	103.00	105.64	106.49	111.38	107.61	106.54	104.56
Nov. 1	102.92	105.39	106.18	111.30	107.30	106.30	104.47
8	103.26	105.40	106.14	111.20	107.42	106.41	104.68
15	102.97	105.11	105.86	111.10	107.12	106.19	104.58
22	102.92	104.89	105.69	111.09	106.93	106.03	104.49
29	103.03	104.92	105.85	111.10	107.08	106.18	104.61
Dec. 6	103.19	105.04	105.76	111.00	107.12	106.27	104.78
13	103.30	104.93	105.66	110.98	107.05	106.22	104.79
20	102.91	104.65	105.52	110.90	106.80	105.97	104.62
27	103.12	104.73	105.59	110.82	106.90	106.09	104.75

Water levels in wells near Beeler pond--Continued

Date	57	56	55	Pond staff gage	54	53	52
1936							
Jan. 3	103.16	104.49	105.29	110.70	106.70	105.91	104.69
10	103.10	104.46	105.24	110.70	106.63	105.87	104.68
17	103.02	104.31	105.01	110.60	106.55	105.80	104.61
24	102.91	104.23	104.94	110.60	106.39	105.68	104.56
31	102.83	104.08	104.73	110.60	106.15	105.52	104.39
Feb. 7	102.89	103.98	104.59	110.50	106.00	105.43	104.44
14	102.79	103.74	104.18	110.50	105.62	105.15	104.25
21	102.55	103.53	104.13	110.50	105.57	104.97	104.13
28	102.59	103.74	104.52	110.39	106.13	105.34	104.23
Mar. 6	102.73	104.31	105.39	110.35	.....	105.97	104.57
13	103.15	105.00	106.11	110.10	.....	106.39	104.96
20	103.14	104.96	105.88	109.95	.....	106.32	104.98
27	103.22	104.67	105.33	109.70	.....	106.09	104.95
Apr. 3	103.05	104.25	104.73	109.50	106.30	105.68	104.75
10	102.99	103.99	104.46	109.47	106.05	105.68	104.63
17	102.80	103.71	104.16	109.30	105.77	105.24	104.45
24	102.86	103.59	104.01	109.12	105.59	105.09	104.37
May 1	102.68	103.36	103.81	109.23	105.44	104.89	104.20
8	102.64	103.52	103.76	109.15	105.39	104.85	104.14
15	102.62	103.42	103.03	109.15	106.00	105.35	104.39
22	102.51	103.25	103.70	109.00	105.42	104.90	104.18
29	102.38	103.11	103.54	108.86	105.23	104.71	104.09
June 5	102.49	103.08	103.52	108.76	105.16	104.65	104.02
12	102.26	102.92	103.41	108.58	104.98	104.47	103.86
19	102.25	102.79	103.31	108.37	104.59	104.26	103.71
26	102.24	102.72	103.19	108.09	104.51	104.09	103.63
July 3	102.09	102.58	103.06	107.65	104.35	103.94	103.49
10	102.04	102.50	102.89	107.38	104.26	103.84	103.39
17	101.94	102.55	102.64	107.08	104.17	103.76	103.30
24	101.94	102.28	102.56	106.80	104.09	103.68	103.24
31	101.69	102.07	102.39	106.75	103.97	103.58	103.10
Aug. 7	101.73	102.02	102.25	106.60	103.83	103.45	103.04
14	101.69	101.94	102.22	106.50	103.78	103.41	102.96
21	101.64	101.84	102.14	106.15	103.72	103.35	102.92
28	101.42	101.65	101.97	105.98	103.52	103.23	102.79
Sept. 4	101.48	101.59	101.76	105.80	103.38	103.14	102.74
11	101.52	101.52	101.76	105.68	104.32	103.05	102.69
18	101.24	101.36	101.49	105.48	103.15	102.84	102.53
25	101.34	101.55	101.60	105.29	103.10	102.84	102.53
Oct. 2	101.17	101.29	101.68	105.75	103.29	102.89	102.45
9	101.25	101.35	101.66	105.63	103.28	102.92	102.48
16	101.04	101.19	101.51	105.50	103.08	102.74	102.32
23	100.86	101.09	102.94	105.46	102.95	102.64	102.25
30	101.20	101.24	103.07	105.35	103.08	102.74	102.35
Nov. 6	100.85	100.96	101.32	105.25	102.83	102.52	102.10
13	100.89	100.94	101.23	105.17	102.77	102.49	102.10
20	100.97	100.96	101.23	105.09	102.77	102.48	102.13
27	100.77	100.79	101.09	104.97	102.60	102.33	101.97
Dec. 4	100.73	100.72	101.05	104.89	102.52	102.24	101.92
11	100.70	100.68	101.02	104.82	102.52	102.23	101.86
18	100.63	100.60	100.83	104.87	102.44	102.15	101.79
25	100.76	100.66	100.88	104.79	102.48	102.17	101.83
1937							
Jan. 1	100.63	100.55	100.82	104.73	102.40	102.08	101.76

Water levels in wells near Beeler pond--Continued

Date	51	58	59	60	61	62	63
1934							
Sept. 26	84.75	94.11	97.86	97.43	.....	.....	.....
28	85.82	94.64	98.38	97.81	84.42	.....	89.16
Oct. 5	88.36	94.63	98.40	97.82	84.30	85.02	89.15
12	90.01	94.59	98.38	97.81	84.25	84.90	89.12
19	91.24	94.75	98.52	97.98	84.49	84.91	89.28
27	91.81	94.35	98.08	98.08	83.86	84.62	88.94
Nov. 3	92.42	94.92	98.63	98.08	84.73	84.07	89.43
10	92.58	94.45	98.14	97.68	84.00	84.37	89.07
17	92.75	94.80	98.44	97.95	84.50	84.27	89.32
24	.....	94.87	98.46	98.26	84.55	84.26	89.39
Dec. 1	93.25	94.94	98.47	98.07	84.66	84.76	89.45
8	93.18	94.70	98.23	97.93	84.31	84.51	89.26
15	93.27	94.86	98.30	97.98	84.57	84.56	89.38
22	93.33	94.94	98.27	98.09	84.66	84.51	89.43
29	93.37	94.75	98.04	97.81	84.41	84.35	89.27
1935							
Jan. 5	93.34	94.86	98.07	97.90	84.59	84.33	89.35
12	93.43	95.01	98.12	98.51	84.81	84.32	89.45
19	93.36	94.75	97.81	97.71	84.48	84.10	89.20
26	93.14	94.62	97.64	97.61	84.30	83.91	89.08
Feb. 2	92.95	94.51	97.49	97.50	84.10	83.73	88.96
9	93.00	94.59	97.63	97.49	84.23	83.73	89.00
16	93.02	94.52	97.27	97.39	84.17	83.66	88.93
23	92.88	94.70	97.39	97.54	84.40	83.62	88.98
Mar. 2	92.91	94.66	97.29	97.44	84.39	83.57	88.94
9	92.82	94.62	97.21	97.41	84.38	83.53	88.88
16	92.74	94.46	96.99	97.18	84.15	83.43	88.72
23	92.64	94.33	96.88	97.05	84.01	83.32	88.58
30	92.58	94.39	96.92	97.07	84.10	83.33	88.58
Apr. 6	92.47	94.49	96.98	97.14	84.20	83.33	88.62
12	92.20	94.17	96.64	96.83	83.70	83.13	88.33
19	92.15	94.29	96.75	96.93	83.90	83.19	88.38
26	92.20	94.39	96.80	96.96	84.09	83.32	88.42
May 3	92.01	94.06	96.46	96.68	83.60	83.10	88.11
10	92.17	94.15	96.61	96.76	83.74	83.15	88.18
17	92.15	94.21	96.66	96.81	83.73	83.22	88.20
24	92.13	94.11	96.65	96.84	83.60	83.36	88.14
31	92.09	94.30	97.20	97.32	83.81	83.54	88.25
June 7	92.08	94.40	98.92	98.56	83.57	83.47	88.12
14	92.16	94.90	100.82	100.06	83.88	83.64	88.26
21	92.19	95.24	101.78	100.92	83.60	83.63	88.09
28	92.21	96.06	102.88	101.99	83.62	83.71	88.12
July 5	92.84	96.66	103.76	102.55	83.62	83.75	88.05
12	92.67	97.08	104.59	102.92	83.38	83.66	88.05
19	bailed	97.65	105.22	103.36	83.44	83.69	87.96
26	84.55	98.00	105.62	103.62	83.47	83.77	87.97
Aug. 2	87.48	98.41	105.82	103.92	83.67	83.95	88.08
9	89.19	98.53	105.91	104.07	83.48	83.94	88.04
16	90.41	98.74	106.02	104.26	83.57	84.03	88.14
23	91.12	98.75	106.10	104.35	83.39	84.33	88.08
31	91.76	98.94	106.27	104.67	83.44	84.39	88.23
Sept. 6	95.25	99.76	108.12	105.74	83.51	84.58	88.35
13	100.53	100.67	108.90	106.47	83.56	87.46	88.48
20	98.57	101.00	108.88	106.77	83.55	86.52	88.54
27	99.59	100.95	108.74	106.81	83.17	86.08	88.39
Oct. 4	98.25	101.16	108.77	106.86	83.41	85.86	88.57
11	98.14	101.33	108.78	106.91	83.50	85.67	88.59
18	100.83	101.33	108.68	106.91	83.29	85.52	88.70
25	99.58	101.59	108.77	106.97	83.29	85.39	88.75
Nov. 1	99.60	101.42	108.71	106.94	83.33	85.25	88.84
8	99.83	101.75	108.89	107.15	83.76	85.27	89.21
15	99.95	101.61	108.75	107.03	83.61	85.05	90.07
22	100.06	101.67	108.69	107.03	83.51	84.94	89.20
29	101.13	101.80	108.83	107.15	83.69	84.96	89.52
Dec. 6	101.15	101.96	108.89	106.27	83.89	85.20	89.80
13	100.69	102.11	108.89	107.33	84.28	84.96	90.23
20	99.71	101.91	108.66	107.13	83.53	84.60	90.15
27	99.13	102.13	108.81	106.28	83.95	84.71	90.67

Water levels in wells near Beeler pond--Continued

Date	51	58	59	60	61	62	63
1936							
Jan. 3	100.55	102.23	108.74	107.27	84.36	84.91	91.40
10	99.91	102.31	108.84	107.26	84.26	84.92	92.08
17	100.29	102.35	108.71	107.22	84.26	84.91	92.56
24	99.20	102.38	108.56	107.15	.....	84.92	92.86
31	98.46	102.38	108.37	107.02	.....	84.91	93.08
Feb. 7	98.18	102.44	108.28	107.06	.....	85.00	93.29
14	98.05	102.40	108.10	107.85	84.22	84.89	93.37
21	97.81	102.35	107.84	106.64	84.09	84.64	93.47
28	100.05	102.37	108.09	106.71	84.29	84.65	93.58
Mar. 6	100.36	102.50	108.49	107.07	84.29	84.68	93.69
13	100.99	102.76	108.87	107.44	84.71	84.66	93.83
20	100.50	102.86	108.90	107.47	85.37	84.47	93.94
27	99.79	103.00	108.73	107.49	84.52	84.48	94.05
Apr. 3	99.99	102.98	108.52	107.33	84.18	84.32	94.13
10	99.74	102.99	108.44	107.18	84.31	84.34	94.30
17	98.75	102.92	108.24	107.00	84.12	84.24	94.21
24	98.41	102.95	108.13	106.91	84.48	84.31	94.26
May 1	100.41	102.84	107.98	106.72	84.43	84.34	94.25
8	.....	102.80	107.88	106.63	84.54	84.40	94.27
15	.....	102.81	108.06	106.76	84.51	84.44	94.36
22	.....	102.73	107.78	106.61	84.45	84.42	94.33
29	.....	102.67	107.64	106.47	84.43	84.54	94.28
June 5	.....	102.61	107.58	106.45	84.66	84.73	94.28
12	.....	102.57	107.40	106.28	84.45	84.77	94.20
19	.....	102.52	107.26	106.14	84.70	84.95	94.13
26	.....	102.47	107.15	106.04	84.75	85.04	94.07
July 3	.....	102.36	107.02	105.89	84.70	85.09	93.96
10	.....	102.28	106.89	105.79	84.80	85.14	93.90
17	96.99	102.21	106.77	105.67	84.80	85.18	93.83
24	96.93	102.15	106.67	105.62	84.99	84.68	93.78
31	96.93	102.01	106.53	105.49	84.66	85.30	93.69
Aug. 7	96.81	101.96	106.48	105.44	84.92	85.44	93.67
14	96.87	101.90	106.41	105.36	85.19	85.47	93.64
21	96.87	101.84	106.29	105.31	85.31	85.48	93.51
28	96.80	101.71	106.07	105.25	85.13	85.50	93.54
Sept. 4	96.82	101.67	105.96	105.08	85.37	85.52	93.51
11	96.84	101.62	105.88	105.04	85.62	85.54	93.50
18	96.72	101.45	105.68	104.84	85.39	85.55	93.41
25	96.77	101.39	105.58	104.81	85.60	85.53	94.39
Oct. 2	96.94	101.25	105.59	104.77	85.50	95.54	93.34
9	97.27	101.22	105.62	104.76	85.88	95.55	93.37
16	97.50	101.05	105.44	104.62	85.73	95.56	93.33
23	97.28	100.91	105.33	104.49	85.60	95.57	93.30
30	97.56	100.96	105.41	104.60	86.11	95.59	93.34
Nov. 6	97.57	100.70	105.19	104.37	85.88	95.57	93.29
13	97.54	100.62	105.14	104.34	86.03	95.59	93.29
20	97.58	100.60	105.14	104.33	86.30	95.59	93.30
27	97.44	100.32	104.96	104.19	86.19	95.59	93.26
Dec. 4	97.43	100.21	104.87	104.11	86.28	95.60	93.23
11	97.72	100.15	104.83	104.07	86.20	95.60	93.20
18	97.81	100.05	104.78	104.01	86.53	95.59	93.20
24	97.74	100.10	104.80	104.02	86.76	95.62	93.22
1937							
Jan. 1	97.78	99.93	104.70	103.92	86.70	95.59	93.18

Water levels in wells near Kindler pond

(Assumed height of zero level on pond staff gage--100.00 feet)

Date	34	34A	34B	34C	Pond staff gage
1934					
May 26	84.76	.....	.....	.....	.....
July 19	83.57	.....	.....	.....	.....
26	83.43	.....	.....	.....	.....
Aug. 6	83.05	.....	.....	.....	.....
9	82.95	.....	.....	.....	.....
16	82.72	.....	.....	.....	.....

Water levels in wells near Kindler pond--continued

Date	34	34A	34B	34C	Pond staff gage
1934					
Aug. 23	82.52	.....	.....	.....	.....
30	83.29	.....	.....	.....	.....
Sept. 6	82.10	.....	.....	.....	.....
12	81.96	.....	.....	.....	.....
20	81.77	.....	.....	.....	.....
27	81.63	.....	.....	.....	.....
Oct. 5	81.49	.....	.....	.....	.....
11	81.37	.....	.....	.....	.....
18	81.25	.....	.....	.....	.....
24	81.15	.....	.....	.....	.....
27	81.11	.....	.....	.....	.....
Nov. 3	81.00	.....	.....	.....	.....
10	80.94	.....	.....	.....	.....
17	80.86	.....	.....	.....	.....
24	80.80	.....	.....	.....	.....
26	.....	92.64	.....	.....	.....
Dec. 1	80.73	92.64	89.26	94.58	.....
8	80.67	92.55	89.01	94.53	.....
15	80.63	92.49	88.88	94.52	.....
22	80.60	92.48	88.76	94.49	.....
29	80.57	92.37	88.64	94.44	.....
1935					
Jan. 5	80.55	92.31	88.60	94.41	.....
12	80.62	92.27	88.53	94.39	.....
19	80.66	92.11	88.34	94.32	.....
26	80.71	92.14	88.37	94.29	.....
Feb. 2	80.78	91.97	88.28	94.24	.....
9	80.81	91.87	88.21	94.20	.....
16	80.83	91.78	88.18	94.17	.....
23	80.89	91.77	88.11	94.14	.....
Mar. 2	81.94	91.68	88.09	94.10	114.14
9	80.98	92.97	88.74	94.08	114.16
16	81.07	94.01	90.78	94.11	.....
23	81.16	93.48	90.92	94.07	115.20
30	81.26	92.89	90.65	94.11	.....
Apr. 6	81.33	92.55	90.30	94.01	.....
13	81.40	92.27	89.65	93.98	.....
20	81.45	92.08	89.13	93.94	.....
27	81.46	91.90	88.85	93.85	.....
May 3	81.49	91.78	87.65	93.85	.....
11	81.47	91.77	88.50	93.84	.....
17	81.45	92.70	87.33	93.79	113.90
24	81.50	96.84	92.39	94.05	.....
31	81.92	99.93	105.40	104.10	119.10
June 5	83.71	102.76	107.81	106.67	118.86
7	85.23	103.46	108.02	106.98	.....
14	90.96	104.27	108.13	107.12	118.28
21	94.65	104.22	107.62	106.87	119.10
28	96.87	104.35	107.57	107.14	119.10
July 5	94.85	104.16	107.01	106.53	118.60
12	98.72	103.84	106.48	105.99	118.23
19	98.51	103.45	105.90	105.30	117.95
26	98.01	102.85	105.23	104.50	117.66
Aug. 2	97.20	102.41	104.60	103.89	117.32
9	96.55	101.80	103.89	103.13	117.06
16	96.05	101.28	103.23	102.52	117.00
23	95.68	100.73	102.73	101.94	118.00
30	97.09	101.53	104.03	104.11	119.10
Sept. 6	99.27	102.87	105.40	105.26	118.68
13	99.98	103.01	105.70	105.23	118.70
20	99.53	102.86	105.49	104.93	118.46
27	99.49	102.50	105.00	104.25	118.28
Oct. 4	98.95	102.25	104.63	103.86	118.06
11	99.33	101.89	104.27	103.37	117.90
18	98.81	101.50	103.90	102.92	117.86
25	98.97	101.25	103.73	102.63	117.80
Nov. 1	99.01	101.04	103.43	102.38	117.68
8	99.07	100.90	103.27	102.20	117.60
15	98.77	100.65	102.88	101.91	117.51
22	98.64	100.37	102.57	101.58	117.46

Water levels in wells near Kindler pond--continued

Date	34	34A	34B	34C	Pond staff gage
1935					
Nov. 29	98.52	100.22	102.38	101.39	117.44
Dec. 6	98.39	99.99	102.32	101.24	117.38
13	98.34	99.96	102.23	101.11	117.30
20	97.89	99.62	101.82	100.79	117.20
27	97.83	99.49	101.78	100.66	117.13
1936					
Jan. 3	97.80	99.37	101.61	100.44	117.08
10	97.52	99.25	101.40	100.22	117.00
17	97.29	98.93	101.16	100.01	117.00
24	97.05	98.74	101.01	99.82	116.90
31	96.82	98.70	100.78	99.64	116.80
Feb. 7	96.71	98.73	100.57	99.50	116.80
14	96.48	98.52	100.31	99.47	116.80
21	96.24	98.65	100.04	99.06	116.80
28	96.21	98.67	100.23	98.94	116.50
Mar. 6	96.12	98.67	100.22	98.88	116.76
13	96.31	98.68	100.97	99.10	116.58
20	96.33	98.68	100.69	99.10	116.42
27	96.30	98.72	100.25	98.96	116.25
Apr. 3	95.95	98.64	99.80	98.68	116.20
10	95.81	98.59	99.60	98.49	116.06
17	95.56	98.54	99.51	98.34	115.90
24	95.51	98.50	99.48	98.22	115.70
May 1	95.38	98.30	99.28	98.10	115.82
8	95.11	98.28	99.26	98.10	115.70
15	94.88	98.22	99.26	97.89	115.72
22	94.08	98.06	99.03	97.76	115.48
29	93.65	97.92	98.75	97.63	115.40
June 5	93.16	97.78	98.69	97.57	115.30
12	92.72	97.72	98.55	97.43	115.77
19	92.06	97.58	98.40	97.35	115.54
26	91.45	97.44	98.19	97.28	115.25
July 3	90.92	97.21	97.86	97.19	115.04
10	90.39	97.00	97.49	97.09	114.67
17	89.86	96.72	97.03	96.99	(a)
24	89.40	96.49	96.60	96.89	(a)
31	89.00	96.24	96.01	96.78	(a)
Aug. 7	88.78	96.10	95.64	96.70	(a)
14	88.31	95.96	95.46	96.47	(a)
21	87.85	95.80	95.03	96.57	(a)
28	87.50	95.60	94.62	96.48	(a)
Sept. 4	87.22	95.48	95.36	96.44	(a)
11	86.95	95.33	94.05	96.37	(a)
18	86.65	95.20	93.75	96.29	(a)
25	86.36	95.12	93.60	96.28	(a)
Oct. 2	86.40	94.97	93.41	96.16	(a)
9	86.22	94.87	93.30	96.13	(a)
16	85.98	94.72	93.15	96.07	(a)
23	85.85	94.62	93.06	96.00	(a)
30	86.17	94.60	93.06	96.00	(a)
Nov. 6	86.39	94.51	92.88	95.94	(a)
13	86.54	94.46	92.85	95.86	(a)
20	86.65	94.43	92.80	95.84	(a)
27	86.71	94.34	92.70	95.76	(a)
Dec. 4	86.76	94.29	92.59	96.04	(a)
11	86.79	94.40	92.64	95.72	(a)
18	86.83	94.19	92.50	95.64	(a)
25	86.84	94.14	92.44	95.60	(a)
1937					
Jan. 1	86.83	94.09	92.36	95.55	(a)

a Pond dry.

MARYLAND

By M. T. Thomson

Periodic records of water levels have been obtained since April 18, 1932, on one observation well in Maryland by the United States Geological Survey in cooperation with the Maryland Geological Survey and the Maryland Department of Health. This work is under the direction of A. H. Horton, district engineer of the Geological Survey. A paper entitled "Relation of stream flow to ground-water levels", by L. L. Harrold, in the Transactions of the American Geophysical Union for 1934 is based on the records of this well.

The well is an abandoned dug well, 20 feet deep, lined with loose stone, at the rear of F. E. Valdenar's residence, 800 feet northeast of the gaging station on the Northwest Branch of the Anacostia River, $1\frac{1}{2}$ miles southwest of Colesville, Montgomery County, Md. Prior to June 1, 1935, daily readings of water level were obtained from a tape-float gage. Since that time a continuous record of water-level fluctuations has been obtained by a weekly water-stage recorder. Measurements are given in feet above the same datum to which is referred the gage on the Northwest Branch of the Anacostia River.

Water level in a well near Colesville, Md., in feet above a datum

(Until June 1, 1935, daily float-gage readings; since June 1, 1935, mean daily stage obtained from weekly recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1932												
1	9.57	9.72	8.69	7.65	6.86	6.30	7.69	9.36
2	9.57	9.63	8.66	7.62	6.83	6.28	7.84	9.34
3	9.52	9.59	8.61	7.59	6.78	6.28	7.86	9.32
4	9.48	9.49	8.55	7.58	6.73	6.26	7.87	9.29
5	9.48	9.49	8.49	7.55	6.68	6.26	7.90	9.26
6	9.47	9.49	8.45	7.51	6.66	6.24	7.92	9.22
7	9.47	9.44	8.43	7.48	6.64	6.26	8.09	9.21
8	9.44	9.35	8.42	7.46	6.63	6.28	8.22	9.14
9	9.41	9.29	8.39	7.43	6.61	6.46	8.23	9.12
10	9.38	8.99	8.33	7.41	6.60	6.49	8.85	9.09
11	9.36	8.79	8.31	7.38	6.58	6.53	8.85	9.08
12	9.39	8.69	8.29	7.34	6.56	6.54	8.86	9.09
13	10.26	9.08	8.24	7.29	6.54	6.56	8.87	9.09
14	10.34	9.08	8.21	7.25	6.52	6.56	8.89	9.10
15	10.35	9.07	8.19	7.21	6.50	6.58	8.91	9.03
16	10.35	9.07	8.15	7.17	6.48	6.60	8.92	8.97
17	10.35	9.03	8.14	7.15	6.48	6.62	8.95	8.99
18	9.97	10.32	9.01	8.12	7.14	6.48	6.96	8.95	8.99
19	9.94	10.30	8.97	8.09	7.14	6.48	6.99	8.96	9.02
20	9.91	10.30	8.97	8.05	7.10	6.48	7.06	9.47	9.02
21	10.30	8.94	8.03	7.07	6.48	7.11	9.45	9.02
22	9.37	8.91	7.99	7.04	6.48	7.15	9.44	9.02
23	9.37	8.91	7.97	7.01	6.38	7.17	9.43	9.04
24	9.79	9.37	8.89	7.92	6.98	6.38	7.23	9.43	9.22

Water level in a well near Colesville, Md.,

in feet above a datum--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1932												
25	....	....	....	9.79	9.36	8.84	7.89	6.95	6.38	7.26	9.43	9.24
26	....	....	....	9.77	9.36	8.79	7.87	6.93	6.37	7.29	9.43	9.27
27	....	....	....	9.74	9.78	8.77	7.86	6.90	6.35	7.33	9.41	9.37
28	....	....	....	9.65	9.77	8.77	7.79	6.86	6.34	7.40	9.39	9.87
29	....	....	....	9.61	9.77	8.74	7.75	6.84	6.34	7.46	9.38	10.27
30	....	....	....	9.57	9.77	8.71	7.71	6.81	6.32	7.52	9.38	10.26
31	....	....	....	....	9.77	....	7.68	6.79	....	7.58	....	10.24
1933												
1	....	10.64	10.81	10.90	11.42	9.92	9.03	8.51	9.76	8.54	8.05	7.78
2	....	10.68	10.76	10.84	11.38	9.89	8.98	8.48	9.71	8.52	8.03	7.77
3	....	10.64	10.69	10.78	11.36	9.84	9.08	8.45	9.62	8.50	8.01	7.75
4	....	10.60	10.60	10.84	11.22	9.81	9.18	8.41	9.57	8.48	8.00	7.73
5	....	10.56	10.50	10.74	11.07	9.78	9.22	8.38	9.56	8.46	7.99	7.73
6	....	10.46	10.45	10.77	11.05	9.75	9.23	8.35	9.53	8.44	8.00	7.71
7	....	10.46	10.48	11.10	10.99	9.73	9.21	8.32	9.48	8.43	8.00	7.69
8	....	10.71	10.66	11.12	10.96	9.72	9.18	8.29	9.42	8.40	7.99	7.67
9	....	10.61	10.55	11.10	10.89	9.72	9.13	8.26	9.33	8.37	7.96	7.66
10	....	10.54	10.41	11.07	10.88	9.67	9.08	8.24	9.25	8.32	7.96	7.65
11	....	10.54	10.31	10.95	10.78	9.63	9.05	8.22	9.21	8.28	7.95	7.67
12	....	10.54	10.30	11.10	10.74	9.59	8.99	8.20	9.18	8.27	7.94	7.66
13	....	10.54	10.30	11.26	10.74	9.62	8.95	8.18	9.15	8.25	7.94	7.64
14	....	10.52	10.41	11.26	10.70	9.58	8.93	8.17	9.11	8.22	7.93	7.63
15	....	10.62	10.35	11.34	10.64	9.52	8.92	8.15	9.11	8.20	7.91	7.62
16	....	10.68	10.19	11.33	10.59	9.50	8.89	8.13	9.08	8.18	7.90	7.61
17	....	10.74	10.18	11.80	10.54	9.49	8.87	8.09	9.06	8.24	7.89	7.59
18	....	10.75	10.16	12.07	10.49	9.44	8.83	8.07	9.03	8.22	7.88	7.57
19	10.08	10.71	10.15	12.05	10.44	9.42	8.79	8.03	8.98	8.22	7.87	7.57
20	10.06	10.88	10.37	12.18	10.39	9.40	8.78	7.99	8.97	8.20	7.86	7.67
21	10.04	11.10	10.95	12.26	10.34	9.36	8.76	7.96	8.93	8.18	7.83	7.73
22	10.04	11.10	11.14	12.75	10.30	9.34	8.73	7.93	8.88	8.18	7.83	7.72
23	9.98	11.07	11.12	12.55	10.25	9.28	8.69	7.95	8.83	8.17	7.83	7.72
24	9.94	11.01	11.06	12.35	10.24	9.24	8.66	10.23	8.79	8.16	7.80	7.73
25	9.91	10.98	11.03	12.25	10.20	9.22	8.64	10.18	8.75	8.16	7.82	7.72
26	10.36	11.04	11.10	12.11	10.16	9.22	8.63	10.03	8.71	8.14	7.83	7.73
27	10.57	10.90	11.03	11.90	10.14	9.16	8.61	9.98	8.67	8.12	7.82	7.73
28	10.65	10.85	11.03	11.75	10.12	9.04	8.58	....	8.65	8.10	7.81	7.73
29	10.68	....	10.96	11.45	10.08	9.05	8.55	9.95	8.63	8.10	7.81	7.73
30	10.68	....	10.89	11.45	10.04	9.06	8.53	9.83	8.58	8.08	7.80	7.73
31	10.65	....	10.86	....	9.98	....	8.52	9.79	....	8.07	....	7.73
1934												
1	7.76	8.35	8.22	9.70	9.61	a9.48	8.76	7.68	7.43	10.14	9.10	9.87
2	7.78	8.34	....	9.88	9.60	9.44	8.73	7.64	7.42	10.12	9.02	10.01
3	7.78	8.34	9.22	9.83	9.66	9.40	8.70	7.61	7.41	10.10	8.98	10.01
4	7.79	8.32	9.25	9.83	9.79	9.36	8.67	a7.57	7.59	10.07	8.99	10.04
5	7.82	....	9.25	9.80	9.78	9.34	8.64	a7.55	7.58	10.05	8.96	10.00
6	8.03	....	9.22	9.78	9.75	9.31	a8.61	7.51	7.52	10.10	8.93	10.02
7	8.06	8.30	9.21	9.78	9.71	a9.26	a8.58	7.48	7.63	10.06	8.91	10.00
8	8.10	....	9.18	9.75	9.65	a9.20	8.53	7.45	7.90	10.01	8.86	10.00
9	8.12	8.30	9.16	9.75	9.61	9.17	8.49	7.42	7.99	9.97	8.80	9.97
10	8.14	....	9.14	9.74	9.61	9.16	8.46	7.39	8.03	9.94	8.79	9.94
11	8.16	8.30	9.10	9.72	9.65	9.14	8.43	7.41	8.05	9.96	8.78	9.90
12	8.19	....	9.08	9.71	9.61	9.12	8.40	7.50	8.06	9.91	8.75	9.86
13	8.22	....	9.07	9.65	9.59	9.09	8.57	7.59	8.09	9.83	8.74	9.84
14	8.23	8.18	9.29	9.62	9.59	9.05	8.34	7.62	8.22	9.78	8.68	9.75
15	8.24	8.16	9.33	9.58	9.67	9.02	8.30	7.61	8.31	9.75	8.64	9.68
16	8.26	....	9.34	9.58	9.65	8.98	8.26	7.63	8.53	9.68	8.62	9.69
17	8.26	8.14	9.33	9.86	9.64	8.92	8.22	7.65	9.07	9.63	8.60	9.63
18	8.24	8.12	9.32	9.96	9.51	8.92	8.18	7.66	9.12	9.60	8.58	9.56
19	8.24	....	9.30	10.00	9.48	9.09	8.15	7.67	9.15	9.55	8.56	9.70
20	8.25	8.11	9.30	10.02	9.45	9.06	8.12	7.66	9.18	9.51	8.53	9.78
21	8.25	....	9.27	9.99	9.48	9.03	8.08	7.66	9.32	9.49	8.51	9.77
22	8.26	8.10	9.23	9.95	9.45	9.00	8.04	7.65	9.60	9.46	8.49	9.75
23	8.33	8.05	9.20	9.94	9.43	8.97	7.99	7.64	9.60	9.39	8.49	9.70
24	8.34	....	9.16	9.92	9.43	8.93	7.95	7.62	9.61	9.35	8.54	9.67
25	8.34	8.21	9.14	9.97	9.47	8.89	7.92	7.60	9.63	9.32	8.51	9.64
26	8.36	8.21	9.11	....	9.47	8.85	7.88	7.58	9.64	9.30	8.49	9.63

a Incomplete day

Water level in a well near Colesville, Md.,

in feet above a datum--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1934												
27	8.39	....	9.14	....	9.48	8.81	7.84	7.57	9.64	9.26	8.49	9.54
28	8.23	....	9.35	9.68	9.49	8.77	7.81	7.55	9.61	9.20	8.48	9.54
29	8.40	....	9.45	9.65	9.47	8.74	7.78	7.53	a9.63	9.16	8.57	9.58
30	8.38	....	9.48	9.63	9.45	8.73	7.75	7.49	a10.07	9.12	9.09	9.49
31	8.37	....	9.50	....	9.43	....	7.72	7.46	....	9.11	....	9.47
1935												
1	9.58	....	12.21	11.18	10.75	a9.61	8.74	7.95	7.14	7.80	7.60	8.82
2	9.63	a10.90	12.21	11.23	10.69	a9.56	8.70	7.92	7.13	7.78	7.61	8.81
3	9.67	10.90	12.10	11.13	10.61	9.55	8.66	7.88	7.15	7.76	7.61	8.82
4	9.59	10.79	11.94	11.05	10.55	9.53	8.63	7.86	7.23	7.73	7.62	8.82
5	9.58	10.69	11.96	11.01	a10.48	9.49	8.60	7.83	7.64	7.69	7.63	8.81
6	9.60	10.58	11.87	10.94	10.46	9.45	8.56	7.80	8.24	7.67	7.65	8.80
7	9.61	10.51	11.75	10.89	10.64	9.40	8.53	7.78	8.25	7.66	7.65	8.79
8	9.60	10.51	11.57	11.36	10.67	9.38	8.50	7.75	8.26	7.64	7.67	8.84
9	9.60	10.50	11.43	12.22	10.64	9.50	8.49	7.73	8.27	7.63	7.67	a8.86
10	9.63	10.79	11.45	12.49	10.62	9.46	8.43	7.70	8.27	7.61	7.67	8.85
11	9.59	10.91	11.54	12.54	10.54	9.41	8.39	7.69	8.25	7.61	7.69	8.84
12	9.53	10.91	12.02	12.57	10.48	9.36	8.36	7.68	8.25	7.60	7.70	8.82
13	9.56	10.91	12.55	12.50	10.45	9.32	8.33	7.65	8.24	7.58	7.84	8.86
14	9.57	11.22	12.61	12.39	10.42	9.29	8.29	7.62	8.21	7.57	7.95	8.93
15	9.53	11.93	12.58	12.35	10.34	9.27	8.26	7.59	8.20	7.56	7.94	a9.00
16	9.51	11.91	12.57	12.20	10.28	9.23	8.23	7.56	a8.19	7.53	a7.96	9.04
17	9.53	12.34	a12.46	12.07	10.26	9.21	8.18	7.52	8.17	7.51	a8.20	9.04
18	9.47	12.39	12.21	11.93	10.21	9.18	8.15	7.49	8.15	7.51	8.53	9.04
19	9.42	12.32	12.16	11.83	10.16	9.13	8.12	7.46	8.13	7.51	8.54	9.04
20	9.53	12.18	12.07	11.73	10.11	9.09	a8.16	7.44	8.12	7.50	8.57	9.04
21	9.97	12.01	11.98	11.65	10.11	9.06	a8.22	7.43	8.09	7.49	8.58	9.03
22	10.83	11.95	11.82	11.54	10.03	9.05	8.18	7.40	8.05	7.48	8.71	9.03
23	11.18	11.87	11.76	11.40	9.98	9.00	8.14	7.37	8.00	7.48	8.72	9.05
24	11.09	11.71	11.65	11.31	9.93	8.96	8.12	7.35	7.98	7.47	....	9.04
25	11.08	11.68	11.60	11.21	9.89	8.93	8.10	7.32	7.95	7.45	a8.64	9.02
26	11.13	11.86	11.48	11.13	9.85	8.90	8.07	7.30	7.93	7.45	8.65	9.03
27	a11.10	12.21	11.56	11.09	9.81	8.89	8.05	7.28	7.90	7.46	8.66	9.00
28	a11.08	12.20	11.28	11.03	9.78	8.85	8.04	7.25	7.88	7.44	8.72	8.97
29	.....	.....	11.17	10.95	9.75	8.81	8.02	7.22	7.86	7.48	8.82	8.96
30	.....	.....	11.12	10.89	9.72	8.77	7.99	7.19	7.82	7.61	8.80	8.96
31	.....	.....	11.07	.....	9.67	....	7.98	7.17	....	7.59	....	8.90
1936												
1	8.87	10.50	9.84	11.40	10.07	8.95	8.00	7.21	6.74	6.43	6.65	6.68
2	8.87	10.47	9.82	11.39	10.04	8.91	7.97	7.19	6.75	6.43	6.65	6.71
3	9.30	10.44	9.83	11.32	10.01	8.86	7.94	7.17	6.77	6.43	6.65	6.74
4	9.50	10.44	9.79	11.12	10.03	8.84	7.92	7.15	6.77	6.43	6.65	6.73
5	10.33	10.37	9.76	11.04	9.94	8.79	7.90	7.12	6.76	6.43	6.66	6.73
6	10.35	10.26	9.71	11.09	9.88	8.76	7.87	7.10	6.76	6.44	6.65	a6.76
7	10.39	10.21	9.67	11.03	9.84	8.73	7.84	7.08	6.76	6.44	6.66	....
8	10.46	10.15	9.63	10.92	9.81	8.70	7.82	7.06	6.75	6.44	6.67	....
9	10.61	10.10	9.62	10.81	9.76	8.65	7.80	7.04	6.74	6.44	6.69	....
10	10.85	10.00	9.59	10.90	9.70	8.62	7.77	7.03	6.72	6.46	6.68	....
11	10.87	9.93	9.74	11.05	9.65	8.60	7.74	7.01	6.70	6.46	6.68	....
12	10.82	9.85	10.59	11.19	9.62	8.59	7.71	6.98	6.69	6.47	6.69	....
13	10.80	9.82	10.75	11.20	9.59	a8.55	7.68	6.96	6.67	6.47	6.70	....
14	10.71	9.87	10.76	11.12	9.56	a8.51	7.65	6.94	6.64	6.47	6.71	a7.04
15	10.70	9.96	10.77	11.13	9.50	a8.48	7.63	6.92	6.62	a6.47	6.72	7.06
16	10.83	10.01	10.77	....	9.47	a8.46	7.60	6.89	6.61	a6.49	6.71	7.10
17	10.83	10.04	10.80	....	9.44	a8.42	7.57	6.87	6.59	6.54	6.72	7.18
18	10.82	10.05	11.11	10.89	9.42	8.41	7.54	6.84	6.58	6.55	6.72	7.19
19	11.11	9.96	11.26	10.79	9.40	8.38	7.51	6.82	6.56	6.56	6.71	a7.22
20	11.22	9.92	11.28	10.70	9.34	8.35	7.47	6.80	6.53	6.57	6.72	....
21	11.27	9.89	11.55	10.62	9.30	8.33	7.44	6.78	6.52	6.58	6.73	....
22	11.19	9.84	11.68	10.56	9.27	8.27	7.40	6.76	6.50	6.59	6.72	....
23	11.10	9.76	11.51	10.52	9.25	8.24	7.38	6.74	a6.49	6.61	6.72	....
24	11.10	9.73	11.49	10.46	9.24	8.22	7.37	6.73	6.48	6.62	6.71	....
25	11.09	9.71	11.46	10.39	9.21	8.20	7.34	6.72	6.48	6.62	6.71	....
26	11.06	9.69	11.36	10.37	9.17	8.16	7.32	6.72	6.46	6.64	6.71	....
27	10.89	9.78	11.34	10.27	9.15	8.14	7.30	6.71	6.45	6.64	6.70	a7.68
28	10.85	9.81	11.53	10.22	9.12	8.12	7.29	6.70	6.44	6.64	6.70	7.69
29	10.79	9.82	11.60	10.17	9.07	8.07	7.27	6.71	6.43	6.65	6.69	7.71
30	10.68	.....	11.58	10.12	9.04	8.04	7.24	6.72	6.42	6.65	6.68	7.73
31	10.62	....	11.54	....	9.00	....	7.22	6.73	....	6.65	....	7.77

a Incomplete day.

MICHIGAN

By V. T. Stringfield

A program of measurements of ground-water level in Michigan was started in the fall of 1932, when the Geological Survey division of the Michigan Department of Conservation, in cooperation with the United States Geological Survey, began an investigation in Roscommon County to determine the areas in which ground water is available at depths of 20 feet or less in sufficient quantity to supply wells that may be used for checking and extinguishing forest fires.

In the spring of 1933 this cooperative work was expanded, through the Michigan Emergency Conservation Work, to cover a large area in the northern part of the southern peninsula. During 1934 O. F. Poindexter, of the State Survey, and A. W. Bergquist, of the Michigan Emergency Conservation Work, together with V. T. Stringfield, of the Federal Survey, started a systematic program of measurements in selected observation wells that were constructed as part of the investigation. The program, which is under the direction of R. A. Smith, State Geologist, and O. E. Meinzer, of the United States Geological Survey, is briefly described on pages 71 to 73 of Water-Supply Paper 777. Water-level measurements were made about twice each month during 1936 by the personnel of the Michigan Emergency Conservation Work under the direct supervision of Mr. Bergquist in about 240 wells in 13 counties in the northern part of the southern peninsula of Michigan. All the wells are in glacial drift in areas unaffected by pumping and are about 10 to 30 feet deep. Most of them are 2 inches in diameter. A continuous water-stage recorder on a well near Roscommon has been in operation since 1934. The water-level fluctuations in that well, which are about typical for the area, are described below.

Roscommon County

The Roscommon recorder well was constructed especially for a continuous water-stage recorder and located at the Michigan Forest Fire Experiment Station headquarters about 2 miles south of Roscommon in the SW $\frac{1}{4}$ sec. 17, T. 24 N., R. 2 W., Roscommon County. Diameter 8 inches, depth 11.5 feet, cased 11.5 feet. Measuring point, top of 6-inch well casing, about 2.5 feet above land surface. Graphic, continuous records of the water level with natural scale are on file in the office of the

geological division of the Michigan Department of Conservation, Lansing, Mich. The measurements in the following table show the highest and lowest water level each month from November 1934 through 1936.

On November 5, 1934, when the recorder was installed, the water level was 8 feet below the top of the casing and about 5.5 feet below the land surface. The water level rose gradually until about the middle of December, when it stood about 4.6 feet below the surface. From the later part of December 1934 to the first part of March 1935 the ground was frozen, so that little or no recharge to the water-bearing sand took place and thus the water level slowly declined to 5.5 feet below the surface. From March 5 to 27 the water level rose 1.3 feet, apparently because the thawing of the ground permitted water to percolate downward to the water-bearing sand. On March 27 the water level stood about 3.9 feet below the surface, the highest stage in 1935. It declined gradually until the later part of September, when a stage of about 5.8 feet below the surface was reached. From that time to February 15, 1936, the water level fluctuated very little, ranging only between the depths of 5.65 to 5.8 feet below the surface. On May 15 the water level rose to 4.4 feet below the land surface, its highest stage in 1936, and from that time it declined until about September 1, when it stood about 6 feet below the surface. The water level on December 25, 1936, stood about 0.26 foot higher than on December 18, 1935, and 0.60 foot lower than on December 31, 1934.

Fluctuations caused by temperature changes in the winter and transpiration from plants were observed during certain periods in 1936. The effects of the changes of atmospheric pressure also were reflected in fluctuations of the water level during periods when the ground was frozen. During the two-year period of record the range in the fluctuation of the water level was only 2.12 feet. The highest level was reached in March 1935, when the water level was 6.40 feet below the top of the casing and about 3.9 feet below the surface of the ground, and the lowest level was reached in August 1936, when the water level was 8.52 feet below the top of the casing and about 6.02 feet below the surface of the ground.

Highest and lowest monthly water levels in a well near
Roscommon, Mich., in feet below the measuring point

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Nov. 5, 1934	8.00	Aug. 1, 1935	7.84	Apr. 30, 1936	7.04
30	7.29	31	8.13	May 15	6.87
Dec. 19	7.11	Sept. 1	8.15	31	7.06
31	7.25	30	8.28	June 1	7.06
Jan. 1, 1935	7.25	Oct. 1	8.28	30	7.59
31	7.53	31	8.30	July 1	7.60
Feb. 1	7.53	Nov. 4	8.34	31	8.23
28	7.67	30	8.15	Aug. 1	8.23
Mar. 1	7.67	Dec. 1	8.15	26	8.52
27	6.40	18	8.12	Sept. 5	8.51
Apr. 1	6.40	Jan. 1, 1936	8.14	30	8.25
30	6.73	31	8.27	Oct. 1	8.25
May 1	6.73	Feb. 1	8.27	31	7.69
30	7.07	15	8.31	Nov. 1	7.69
June 1	7.07	Mar. 15	8.17	14	7.56
30	7.32	31	7.38	Dec. 1	7.65
July 1	7.32	Apr. 1	7.38	25	7.86
31	7.84				

MONTANA

FLATHEAD VALLEY BETWEEN FLATHEAD LAKE AND KALISPELL

By W. A. Lamb

The investigation of the ground-water levels in the valley and delta area between Kalispell and the head of Flathead Lake ^{1/} was continued in 1936. About 14 measurements were made in 45 wells during the year, making a total of about 122 measurements made since observations were begun in July, 1928. The locations and descriptions of the wells and water-level measurements in them through 1935 are given in Water-Supply Paper 777. Average monthly water levels for the period 1928 to 1936 and individual measurements made in 1936 are given in the following tables.

Average monthly water levels in the observation wells in Flathead Valley

(The average given for each month was computed from the first series of measurements made in that month and indicates height, in feet, above an arbitrary datum; 2,800 must be added to convert these averages to altitude above sea level.)

Month	1928	1929	1930	1931	1932	1933	1934	1935	1936
Jan.	.....	85.65	86.89	86.75	86.58	.....	.....	.....	86.32
Feb.	.....	87.79	.....	.....	.....	86.59	.....	86.93	.....
Mar.	.....	88.16	.....	86.92	86.70	86.71	87.51	86.76	87.06
Apr.	.....	88.05	86.96	86.86	.....	86.83	87.82	.....	87.04
May	.....	88.13	87.48	87.03	87.21	86.87	88.53	87.01	87.30
June	.....	88.38	87.60	87.01	88.29	87.68	88.19	87.76	87.74
July	.....	88.37	87.30	86.79	87.98	89.14	.....	87.28	87.32
Aug.	.....	87.59	86.91	86.59	87.28	88.24	87.53	.....	86.95
Sept.	88.54	.....	86.77	.....	86.98	87.56	87.19	86.77	86.54
Oct.	88.17	87.30	.....	86.29	86.75	87.37	.....	86.31	86.42
Nov.	88.03	87.08	86.72	86.12	.....	.....	86.91	.....	.....
Dec.	87.91	87.03	.....	.....	86.75	87.44	86.83	.....	86.20

Date (1936)							
Well no.	Jan. 7	Mar. 18	Apr. 21	May 8	May 14	May 18	May 29
1	87.52	88.30	88.34	88.35	88.35	88.36	88.39
2	84.66	85.33	85.24	85.18	85.15	85.11	84.96
3	83.05	83.53	83.18	83.76	83.72	83.68	83.49
4	84.41	85.20	83.86	84.99	84.96	84.91	84.80
5	88.00	88.81	88.77	88.77	88.79	88.82	88.93
7	88.86	89.38	89.26	89.24	89.27	89.26	89.26
8	88.52	88.94	89.44	89.41	89.39	89.41	89.21
9	.....	87.96	88.00	88.05	88.09	88.08	88.09
10	87.40	88.13	88.17	88.22	88.24	88.25	88.34
11	85.85	86.88	86.83	86.79	86.76	86.73	86.64
12	.....	86.84	86.71	.....	86.39	.....	86.65
13	84.20	87.02	86.39	86.21	86.15	86.11	86.03
14	84.27	84.47	84.34	84.82	85.07	85.31	86.18
15	.....	.....	85.49	85.70	.....	85.06	85.81
16	.....	.....	87.70	87.67	87.81	87.76	87.85
17	.....	.....	.....	.....	.....	87.02	.....
18	.....	.....	88.31	88.31	88.19	.....	88.22

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 74-85, 1936.

Water levels in Flathead Valley--Continued

Well no.	Date (1936)						
	Jan. 7	Mar. 18	Apr. 21	May 8	May 14	May 18	May 29
19	86.73	89.02	88.51	88.36	87.87	87.74	87.35
20	87.62	88.03	88.02	88.05	88.01	88.03	87.99
21	86.10	87.39	86.01	86.05	86.11	86.18	86.44
22	87.05	87.14	86.98	87.32	87.49	87.65	88.07
23	.....	83.33	86.49	90.56	92.57	93.66	93.50
24	86.73	87.45	87.06	87.51	87.77	93.80	93.91

Well no.	June 6	June 15	July 12	Aug. 8	Sept. 27	Oct. 24	Dec. 16
1	88.42	88.22	88.27	88.08	88.06	87.61	87.45
2	84.80	84.70	84.50	83.70	84.14	84.11	83.39
3	83.17	83.02	82.71	82.45	82.12	82.10	82.52
4	84.64	84.57	84.31	84.07	83.93	83.98	84.12
5	88.97	89.01	88.59	88.36	88.09	87.47	87.93
7	89.24	89.04	89.05	89.07	88.97	88.90	88.88
8	89.10	89.05	88.62	88.38	88.24	88.15	88.45
9	88.12	88.25	88.15	87.87	87.66	87.51	87.35
10	88.40	88.43	88.08	87.84	87.52	87.34	87.28
11	86.51	86.42	86.09	85.82	85.56	85.63	85.69
12	86.55	86.55	.....	.....	.....	.....	83.46
13	85.97	85.84	85.30	84.75	84.42	84.28	84.22
14	86.73	87.16	86.70	86.05	85.00	84.35	84.13
15	85.87	.....	.....	.....	.....	.....	84.20
16	87.82	.....	.....	.....	.....	.....	87.05
17	.....	.....	.....	.....	.....	.....	84.72
18	88.18	.....	.....	.....	.....	.....	.....
19	87.03	86.98	86.21	84.85	85.58	86.12	86.54
20	88.00	88.05	87.69	87.70	87.65	87.64	87.58
21	86.69	87.00	87.24	86.88	86.49	86.13	85.88
22	88.32	88.53	88.41	88.14	87.64	87.41	87.01
23	92.94	91.31	87.76	85.99	84.00	83.40	83.03
24	93.74	.....	.....	.....	.....	.....	.....

Well no.	Jan. 7	Mar. 18	Apr. 21	May 8	May 14	May 18	May 29
25	.....	85.94	85.78	86.20	86.41	86.58	87.17
26	86.74	86.48	86.21	86.31	86.42	86.50	86.74
27	85.01	84.94	84.80	86.45	87.31	88.10	89.62
28	86.54	86.54	86.44	86.85	87.04	87.15	87.47
29	85.50	85.51	85.48	86.74	87.35	87.86	88.67
30	86.76	87.06	87.28	87.34	87.66	87.62	87.62
31	87.37	87.62	87.79	87.76	87.81	87.79	87.78
32	89.68	90.41	90.52	90.51	90.52	90.52	90.27
33	85.66	86.80	86.64	86.60	86.53	86.47	86.30
34	87.26	87.62	87.60	87.70	87.69	87.69	87.69
35	86.94	87.89	87.80	87.75	87.76	87.75	87.97
36	85.85	86.26	86.47	86.47	86.48	86.52	86.52
37	85.38	85.95	86.11	86.16	86.17	86.18	86.15
38	84.82	86.75	86.59	86.56	86.56	86.55	86.50
39	84.83	86.10	85.91	85.91	85.97	85.99	86.09
40	85.14	86.16	86.59	86.51	87.05	88.83	89.02
41	87.45	88.08	88.23	88.27	88.30	88.30	88.27
43	88.00	88.41	88.54	88.55	88.55	88.56	88.57
44	88.51	89.28	89.24	89.14	89.15	89.12	89.08
45	.....	89.32	89.36	89.38	89.41	89.41	89.41
46	85.72	86.29	86.26	86.28	86.30	86.29	86.28
47	86.73	87.45	87.06	87.51	87.77	93.80	93.91
Average	86.41	87.07	87.04	87.31	87.45	87.78	87.89

Water levels in Flathead Valley--Continued

Well no.	Date (1936)						
	June 6	June 15	July 12	Aug. 8	Sept. 27	Oct. 24	Dec. 16
25	87.60	88.03	88.47	88.29	87.34	86.81	86.13
26	86.92	87.16	87.50	87.64	87.21	86.96	86.45
27	89.79	90.36	88.81	87.29	85.78	85.16	84.70
28	87.67	87.75	87.66	87.40	86.93	86.72	86.41
29	89.11	88.87	87.80	86.81	85.93	85.59	85.26
30	87.61	87.59	87.43	87.51	87.29	87.19	86.98
31	87.79	87.78	87.60	87.72	87.68	87.70	87.58
32	90.45	90.41	90.21	89.97	89.77	89.67	89.54
33	86.10	85.96	85.55	85.11	84.71	84.73	86.14
34	87.15	87.62	87.45	87.42	87.45	87.46	87.37
35	87.69	87.66	87.49	87.41	87.26	87.46	.....
36	86.51	86.52	86.86	86.41	86.36	86.28	86.24
37	86.12	86.12	85.92	85.71	85.57	85.60	85.62
38	86.46	86.44	85.98	85.89	85.79	85.83	85.80
39	86.15	86.20	85.83	85.51	85.11	84.65	84.82
40	89.33	85.74	86.60	85.80	85.18	85.06	84.81
41	88.29	88.28	87.97	87.89	87.64	87.47	87.40
43	88.54	88.52	88.36	88.30	88.03	88.02	87.89
44	89.05	89.00	88.74	88.68	88.52	88.43	88.45
45	89.39	89.36	88.66	89.13	88.97	88.83	88.88
46	86.20	86.16	86.01	85.69	85.50	85.47	85.42
47	93.74	93.05	91.05	89.51	87.86	87.29	86.54
Average	87.88	87.66	87.33	86.95	86.56	86.42	86.17

NEBRASKA

By Leland K. Wenzel

The State-wide program of water-level measurements in wells in Nebraska was continued in 1936 by the United States Geological Survey in cooperation with the Conservation and Survey Division of the University of Nebraska. At the end of the year periodic observations of water level were being made in 393 wells. An average of about 6 measurements were made in each of 337 wells on which observations were begun prior to 1936, and from 1 to 5 measurements were made in 56 other wells that were incorporated in the program during the year. A total of about 2,150 individual measurements were made in 1936 in connection with the cooperative investigation.

Periodic measurements of the temperature of the water in the observation wells was begun in the summer of 1936, and it is planned to continue these observations indefinitely. The chemical character of samples of water collected from about 100 of the wells during the year was determined in the laboratory of the United States Geological Survey in Washington. Additional analyses will be made in 1937. The temperature data and chemical analyses are not yet in form for publication.

Papers on the water-bearing formations of Nebraska^{1/} and the conservation of land and water resources of Nebraska^{2/} were published during the year by the Conservation and Survey Division of the University of Nebraska. Two articles dealing more specifically with ground-water levels in the State were published in the Transactions of the American Geophysical Union.^{3/}

The precipitation in Nebraska in 1936 amounted to only about 63 percent of the normal average, and as a result the water levels in most wells declined below their corresponding stages of 1935. The water levels in some wells declined below their low stages of 1934, but these net 2-year declines generally were limited to fractions of a foot. In general, water levels in 1936 declined the least in western Nebraska and the most in the eastern part of the State. However, in southeastern Nebraska, the water levels in most of the observation wells maintained

1/ Condra, G. E., and Reed, E. C., Water-bearing formations of Nebraska: Nebraska Geol. Survey Paper 10, 1936, 24 pp.

2/ Condra, G. E., Conservation of land and water resources of Nebraska: Nebraska Univ., Conservation Dept., Bull. 14, 1936, 46 pp.

3/ Wenzel, L. K., The recovery of ground-water levels in Nebraska in 1935: Am. Geophys. Union Trans., 1936, pp. 370-371. Several methods of studying fluctuations of ground-water levels: Idem, pp. 400-405.

stages in 1936 appreciably above their low levels of 1934, and consequently the acute water shortage that existed in this part of the State in 1934 did not recur in 1936. The amount of water contained in the ground-water reservoirs in southeastern Nebraska was increased in 1935 and also in the first part of 1936 to such an extent that this storage was generally ample to supply demands during the subsequent dry summer and fall.

In the sand hills of central Nebraska water levels in many of the observation wells reached low levels in 1936, but there were no water shortages because in most places several hundred feet of saturated water-bearing material occurs below the land surface. The levels of many sand-hill lakes doubtless declined in 1936, inasmuch as the surfaces of these lakes usually represent exposed parts of the water table. There were very few significant changes in water level in the deep wells on the upland plains and tablelands. The fluctuations of water level in most of these wells have not shown a definite trend and have ranged between limits of only a foot or less since observations on them were begun in 1934.

Water levels in wells in the central Platte River Valley generally declined in 1936 to about their low levels of 1934. The following table gives average interpolated water levels in four groups of wells in the Platte Valley in 1936 and comparisons with average stages of previous years. Averages of the water levels in these wells from 1931 to 1935 are given in Water-Supply Paper 777, page 90.

Average of water levels, expressed as heights
above a datum, in wells in the Platte Valley, Nebraska.

Date	Wells between Grand Island and Kearney		Wells between Kearney and Gothenburg	
	15 wells in which the water level stands from 10 to 30 feet below the land surface (feet)	6 wells in which the water level stands from 1 to 10 feet below the land surface (feet)	10 wells in which the water level stands from 10 to 30 feet below the land surface (feet)	10 wells in which the water level stands from 1 to 10 feet below the land surface (feet)
Jan. 1, 1936	100.72	101.30	100.95	101.01
Apr. 1	100.84	101.79	100.99	101.17
July 1	100.35	100.54	100.82	100.78
Oct. 1	99.55	99.53	99.46	99.03
Net change in years ending				
Oct. 1, 1932	+ .53	+ .49	+ .25	+ .48
1933	- .71	- .24	.00	+ .05
1934	-1.31	-1.27	- .99	-2.00
1935	+ .90	+1.21	+ .98	+2.07
1936	-1.09	-1.21	-1.36	-1.78
Net change from Jan. 1, 1931, to Oct. 1, 1936	-2.68	-2.58	-3.12	-3.17

An inspection of this table indicates that in three out of the four groups of wells the decline of the water level was less in 1936 than in 1934. However, the decline in 1936 exceeded the rise in 1935 in two groups and equaled it in another. Thus the water level in the first two groups reached a stage in 1936 that was lower than in 1934, and the water level in the third group declined to the same low stage. The rise in the fourth group in 1935 exceeded the decline in 1936, and hence the water level in 1936 did not drop to the low stage of 1934. The net decline in water level from January 1, 1931, to October 1, 1936, in all the groups of wells, which has been caused chiefly by deficient precipitation, indicates a general lowering of the water table over the valley of nearly the same amount.

Average water levels in 252 wells scattered throughout Nebraska are given in Water-Supply Paper 777, page 91, but it has not been found feasible to continue the averages in this report. However, records and water-level measurements of 337 wells on which periodic measurements were begun prior to 1936 are included in the following pages. All measurements made in 1936 are given, together with almost all measurements made prior to that year. Measurements made since 1930 in wells in the Platte River Valley, which includes wells in Buffalo, Dawson, Hall, Kearney, and Phelps Counties, are also given. The records of water levels in well 85, in Morrill County, were furnished by the Nebraska Department of Roads and Irrigation, and the measurements in well 3, on the Crescent Lake Bird Refuge, in Garden County, were furnished by the United States Biological Survey.

The well descriptions and measurements are listed alphabetically by county locations and by numbers within each county. Original field numbers are used. Complete records on the five wells included in Water-Supply Paper 777, page 92, are included under the proper county headings, but the numbers of these wells have been changed. Pawnee County well 1 is now well 4; Dakota County 1 is 104; Gosper County 1 is 182; Cheyenne County 2 is 84; and Lincoln County 7 is 241. The descriptions of the measuring points and the heights of the measuring points above land surface and above datum for all wells given in this report are those that existed at the end of 1936. The depth of the water level below the measuring point which is given for the first day of record is referred to the present measuring point. This includes wells on which the measuring point has been altered.

All water levels are expressed in feet above an assumed datum 100 feet below the water level in that well on January 1, 1935. The height of the measuring point above the datum for most wells that have been established since January 1, 1935, has been taken as the average height of the water level in a group of similar wells on some selected date. All water levels given for any one well are directly comparable, even though the altitude of the measuring point has been changed, because the records are given in heights above a datum that has been referred to one or more benchmarks near the well.

Adams County

193. H. Fricke, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 7 N., R. 10 W. Drilled irrigation well, diameter 8 inches, depth 155 feet. Measuring point, top of casing, 1.0 foot above land surface and 200.96 feet above datum. Water level Oct. 3, 1934, 100.96 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1934	100.00	July 23, 1935	99.89	Jan. 27, 1936	99.84
Nov. 30	99.99	Aug. 26	99.84	June 15	99.82
Jan. 22, 1935	100.01	Sept. 27	99.80	Aug. 12	99.73
Mar. 14	100.01	Oct. 30	99.80	Aug. 21	99.64
May 12	99.96	Dec. 5	99.87	Dec. 15	99.60
June 22	99.96	Jan. 7, 1936	99.86		

Antelope County

111. A. Hopkins, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 27 N., R. 7 W. Drilled well, diameter 9 inches, depth 75.9 feet. Measuring point, top of 1-inch pipe, 0.1 foot above land surface and 170.86 feet above datum. Water level Aug. 23, 1934, 70.48 feet below measuring point.

Aug. 23, 1934	100.38	July 11, 1935	99.59	Jan. 13, 1936	99.86
Nov. 6	100.07	Aug. 9	99.74	Mar. 24	99.75
Dec. 31	100.00	Sept. 12	99.83	May 30	99.50
Feb. 22, 1935	99.82	Oct. 17	99.70	July 16	99.39
Apr. 16	99.93	Nov. 21	99.80	Sept. 14	99.48
June 4	99.72	Dec. 23	99.70	Nov. 10	99.31

202. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 1, T. 24 N., R. 6 W. Driven well, diameter 1 inch, depth 9.7 feet. Measuring point, top of pipe, 0.8 foot above land surface and 104.87 feet above datum. Water level Dec. 31, 1934, 4.87 feet below measuring point.

Dec. 31, 1934	100.00	Aug. 10, 1935	99.08	Jan. 13, 1936	99.99
Feb. 22, 1935	100.04	Sept. 12	99.06	Mar. 24	100.34
Apr. 16	100.36	Oct. 17	99.22	May 30	100.34
June 4	103.03	Nov. 21	99.48	Nov. 10	99.46
July 11	99.83	Dec. 23	99.74		

Arthur County

251. University of Nebraska, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 18 N., R. 38 W. Drilled well, diameter 2 inches, depth 46.5 feet. Measuring point, top of pipe, 1.6 feet above land surface and 133.21 feet above datum. Water level Dec. 1, 1934, 13.22 feet below measuring point.

Dec. 1, 1934	99.99	July 17, 1935	100.42	Jan. 1, 1936	99.88
Jan. 8, 1935	100.00	Aug. 19	100.09	21	99.78
Mar. 2	99.91	Sept. 18	100.05	Mar. 30	99.79
Apr. 25	99.93	Oct. 25	100.23	Sept. 10	98.91
June 13	100.06	Nov. 28	99.91	Nov. 30	99.61

Banner County

238. F. Grant, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 19 N., R. 55 W. Irrigation well, diameter 72 inches, depth 44.1 feet. Measuring point, top of iron plate, 0.8 foot above land surface and 134.00 feet above datum. Water level Oct. 12, 1934, 33.31 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 12, 1934	100.69	Aug. 20, 1935	104.94	Mar. 31, 1936	104.44
Nov. 19	100.34	Sept. 19	106.23	June 9	103.47
Jan. 10, 1935	99.95	Oct. 26	106.01	Aug. 7	102.75
Mar. 5	99.26	Nov. 29	105.90	Aug. 29	102.47
June 15	100.85	Jan. 2, 1936	105.62	Dec. 3	101.26
July 18	103.52	22	105.37		

354. A. Andersen, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T. 17 N., R. 55 W. Abandoned well, diameter 6 inches, depth 247.8 feet. Measuring point, hole in side of casing, 0.2 foot below land surface and 319.61 feet above datum. Water level Nov. 29, 1935, 219.63 feet below measuring point.

Nov. 29, 1935	99.98	Mar. 31, 1936	100.20	Aug. 29, 1936	100.11
Jan. 2, 1936	100.34	June 9	99.98	Dec. 3	100.12
Jan. 22	99.98	Aug. 7	100.21		

Blaine County

210. University of Nebraska, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 22, T. 23 N., R. 22 W. Driven well, diameter 1 inch, depth 12.5 feet. Measuring point, top of pipe, 1.4 feet above land surface and 103.63 feet above datum. Water level Dec. 15, 1934, 3.59 feet below measuring point.

Dec. 15, 1934	100.04	Aug. 16, 1935	98.16	Mar. 27, 1936	99.77
Jan. 7, 1935	99.99	Sept. 16	98.39	June 3	98.93
Feb. 27	99.80	Oct. 23	98.98	July 21	97.85
Apr. 20	99.67	Nov. 26	99.17	Aug. 26	98.14
June 8	99.85	Dec. 30	99.30	Nov. 25	99.09
July 15	98.28	Jan. 18, 1936	99.46		

211. University of Nebraska, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 22 N., R. 24 W. Driven well, diameter 1 inch, depth 12.7 feet. Measuring point, top of pipe, 1.4 feet above land surface and 105.07 feet above datum. Water level Dec. 16, 1934, 5.13 feet below measuring point.

Dec. 16, 1934	99.94	Aug. 16, 1935	98.88	Mar. 27, 1936	100.55
Jan. 7, 1935	100.03	Sept. 16	99.28	June 3	100.17
Feb. 27	100.10	Oct. 23	99.50	July 21	98.71
Apr. 20	100.40	Nov. 26	99.84	Aug. 26	98.65
June 8	101.23	Dec. 30	99.98	Nov. 24	99.57
July 15	99.80	Jan. 18, 1936	100.05		

237. Cox & Sons, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 24 N., R. 25 W. Abandoned well, diameter 1 $\frac{1}{2}$ inches, depth 28.1 feet. Measuring point, top of pipe, 1.0 foot above land surface and 117.23 feet above datum. Water level Oct. 11, 1934, 17.18 feet below measuring point.

Oct. 11, 1934	100.05	July 15, 1935	100.27	Jan. 18, 1936	100.13
Nov. 13	100.03	Aug. 16	100.32	Mar. 27	100.06
Jan. 7, 1935	99.99	Sept. 16	100.34	June 3	99.95
Feb. 26	99.95	Oct. 23	100.24	July 21	99.87
Apr. 20	99.92	Nov. 26	100.27	Aug. 26	99.85
June 8	100.05	Dec. 30	100.10	Nov. 25	99.79

Boone County

200. University of Nebraska, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 18 N., R. 5 W. Driven well, diameter 1 inch, depth 16.4 feet. Measuring point, top of pipe, 1.5 feet above land surface and 109.16 feet above datum. Water level Jan. 2, 1935, 9.16 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 2, 1935	100.00	Sept. 9, 1935	99.63	Mar. 21, 1936	101.91
Feb. 14	100.13	Oct. 12	99.58	May 26	100.37
Apr. 12	100.36	Nov. 18	99.96	July 11	99.17
May 29	102.33	Dec. 20	100.12	Aug. 19	98.70
July 8	101.34	Jan. 9, 1936	100.25	Nov. 8	99.38
Aug. 6	99.80				

201. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 21 N., R. 7 W. Driven well, diameter 1 inch, depth 16.4 feet. Measuring point, top of pipe, 1.3 feet above land surface and 105.01 feet above datum. Water level Jan. 2, 1935, 5.00 feet below measuring point.

Jan. 2, 1935	100.01	Aug. 6, 1935	99.28	Jan. 9, 1936	100.05
Feb. 14	100.26	Sept. 9	99.87	May 26	99.84
Apr. 12	101.03	Oct. 12	99.67	July 11	98.89
May 29	101.22	Nov. 18	99.96	Aug. 18	98.67
July 8	99.88	Dec. 20	100.01	Nov. 7	99.52

207. University of Nebraska, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 18 N., R. 7 W. Driven well, diameter 1 inch, depth 14.3 feet. Measuring point, top of pipe, 1.7 feet above land surface and 107.74 feet above datum. Water level Jan. 2, 1935, 7.75 feet below measuring point.

Jan. 2, 1935	99.99	Sept. 9, 1935	100.20	Mar. 21, 1936	100.65
Feb. 14	100.25	Oct. 12	99.84	May 26	100.12
Apr. 12	100.35	Nov. 18	100.08	July 11	100.18
May 29	100.74	Dec. 20	100.06	Aug. 19	99.90
July 8	100.28	Jan. 9, 1936	100.22	Nov. 8	100.11
Aug. 6	99.71				

Box Butte County

78. F. Krejci, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 27 N., R. 47 W. Drilled well, diameter 6 inches, depth 19.5 feet. Measuring point, bottom edge of pipe clamp, 0.6 foot above land surface and 112.74 feet above datum. Water level Aug. 27, 1934, 12.43 feet below measuring point.

Aug. 27, 1934	100.31	Oct. 22, 1935	101.80	Mar. 27	100.76
Nov. 11	100.05	Nov. 25	101.93	June 2	101.50
Apr. 19, 1935	99.91	Dec. 28	101.99	July 21	100.81
July 14	101.43	Jan. 17, 1936	101.89	Aug. 28	100.44
Sept. 14	101.79				

129. M. Jacobson, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 25 N., R. 50 W. Drilled well, diameter 6 inches, depth 109.7 feet. Measuring point, top of iron plate, 0.6 foot above land surface and 203.48 feet above datum. Water level Nov. 12, 1934, 103.53 feet below measuring point.

Nov. 12, 1934	99.95	July 15, 1935	99.87	Dec. 28, 1935	99.79
Jan. 5, 1935	100.00	Aug. 15	99.87	Jan. 17, 1936	99.69
Feb. 26	99.86	Sept. 14	99.95	Mar. 27	99.80
Apr. 19	99.90	Oct. 23	99.77	Aug. 27	99.72
June 8	99.90	Nov. 25	99.89	Nov. 23	99.86

Box Butte County--Continued

316. W. Davidson, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 25 N., R. 48 W. Drilled well, diameter 6 inches, depth 71 feet. Measuring point, hole in steel cap, 0.8 foot above land surface and 155.01 feet above datum. Water level Nov. 12, 1934, 55.05 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 12, 1934	99.96	Aug. 15, 1935	99.52	Mar. 27, 1936	99.76
Jan. 5, 1935	100.01	Sept. 14	99.54	June 3	99.35
Feb. 26	100.01	Oct. 23	99.64	July 21	98.70
Apr. 19	100.00	Nov. 25	99.67	Aug. 27	98.36
June 7	100.03	Dec. 28	99.75	Nov. 24	98.69
July 15	99.65	Jan. 17, 1936	99.77		

338. E. Wildy, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 27 N., R. 49 W. Drilled well, diameter 4 inches, depth 156 feet. Measuring point, hole in side of casing, 0.6 foot above land surface and 219.10 feet above datum. Water level Aug. 14, 1935, 119.12 feet below measuring point.

Aug. 14, 1935	99.98	Dec. 28, 1935	99.92	July 21, 1936	99.57
Sept. 14	99.77	Jan. 17, 1936	99.81	Aug. 28	99.51
Oct. 22	99.40	Mar. 27	100.04	Nov. 23	99.48
Nov. 25	99.54	June 2	99.79		

378. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T. 28 N., R. 51 W. Driven well, diameter 1 inch, depth 11.2 feet. Measuring point, top of pipe, 1.6 feet above land surface and 103.74 feet above datum. Water level Nov. 25, 1935, 3.73 feet below measuring point.

Nov. 25, 1935	100.01	Mar. 27, 1936	100.52	Sept. 11, 1936	98.46
Dec. 28	100.29	June 2	100.03	Nov. 23	99.82
Jan. 17, 1936	100.47	July 21	98.44		

Boyd County

74. A. Christman, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 34 N., R. 13 W. Dug well, diameter 12 inches, depth 17.7 feet. Measuring point, top of iron plate, 0.4 foot above land surface and 113.51 feet above datum. Water level Aug. 24, 1934, 14.31 feet below measuring point.

Aug. 24, 1934	99.20	July 11, 1935	102.13	Jan. 15, 1936	100.14
Nov. 7	100.26	Aug. 10	101.26	Mar. 25	101.08
Dec. 31	100.00	Sept. 12	100.56	May 30	101.63
Feb. 22, 1935	100.04	Oct. 18	100.17	July 17	100.92
Apr. 17	100.07	Nov. 22	100.15	Sept. 13	100.12
June 4	100.72	Dec. 24	100.10	Nov. 12	99.97

75. E. Engelhaupt, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 9, T. 33 N., R. 13 W. Dug well, diameter 24 inches, depth 26.8 feet. Measuring point, top of casing, 2.0 feet above land surface and 118.81 feet above datum. Water level Aug. 24, 1934, 19.04 feet below measuring point.

Aug. 24, 1934	99.77	July 13, 1935	102.86	Jan. 15, 1936	101.52
Nov. 7	99.31	Aug. 10	102.34	Mar. 25	102.61
Dec. 31	99.99	Sept. 12	101.67	May 30	103.98
Feb. 22, 1935	100.36	Oct. 18	100.97	July 17	102.66
Apr. 17	101.33	Nov. 22	101.06	Sept. 13	100.91
June 4	102.67	Dec. 24	101.24	Nov. 12	100.85

209. University of Nebraska, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 32 N., R. 10 W. Driven well, diameter 1 inch, depth 15.2 feet. Measuring point, top of pipe, 1.2 feet below land surface and 107.70 feet above datum. Water level Dec. 30, 1934, 7.70 feet below measuring point.

Dec. 30, 1934	100.00	July 11, 1935	99.60	Oct. 18, 1935	99.83
Apr. 17, 1935	100.22	Aug. 10	99.59	Nov. 21	99.73
June 4	100.87	Sept. 12	99.53	Dec. 24	99.96

Boyd County--Continued

209. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 15, 1936	101.46	May 30, 1936	99.69	Sept. 13, 1936	99.56
Mar. 25	99.97	July 17	99.25	Nov. 11	99.87

Brown County

243. T. Bower, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 30 N., R. 22 W. Drilled irrigation well, diameter 108 inches, depth 59.3 feet. Measuring point, top of 2- by 6-inch sill, 0.5 foot above land surface and 117.17 feet above datum. Water level Nov. 8, 1934, 17.32 feet below measuring point.

Nov. 8, 1934	99.85	July 13, 1935	a/81.07	Jan. 16, 1936	100.28
Jan. 2, 1935	100.02	Sept. 13	99.59	Mar. 25	100.72
Feb. 23	100.22	Oct. 21	99.88	May 31	100.78
Apr. 17	100.50	Nov. 22	100.07	Sept. 13	98.67
June 5	101.24	Dec. 27	100.24	Nov. 19	99.56

Buffalo County

52. W. Starks, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2, T. 12 N., R. 14 W. Drilled well, diameter 8 inches, depth 17 feet. Measuring point, top of iron plate, 1.0 foot above land surface and 106.07 feet above datum. Water level Aug. 7, 1934, 7.74 feet below measuring point.

Aug. 7, 1934	98.33	July 9, 1935	100.39	Jan. 11, 1936	99.92
Nov. 5	99.19	Aug. 8	99.05	Mar. 23	100.74
Dec. 28	99.97	Sept. 10	99.51	May 28	100.13
Feb. 20, 1935	100.47	Oct. 15	99.21	July 14	98.90
Apr. 15	100.66	Nov. 19	99.53	Sept. 15	98.57
June 10	101.81	Dec. 22	99.79	Nov. 4	99.15

232. W. Buettner, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 10 N., R. 17 W. Drilled irrigation well, diameter 18 inches, depth 104 feet. Measuring point, top of pump base, 1.0 foot above land surface and 132.45 feet above datum. Water level Oct. 9, 1934, 33.34 feet below measuring point.

Oct. 9, 1934	99.11	July 16, 1935	100.71	Jan. 20, 1936	100.89
Nov. 13	99.60	Aug. 16	100.41	Mar. 28	101.06
Dec. 26	99.97	Sept. 17	100.47	June 4	100.98
Feb. 27, 1935	100.26	Oct. 24	100.53	July 22	100.24
Apr. 23	100.47	Nov. 27	100.77	Aug. 26	99.64
June 11	101.04	Dec. 31	100.86	Nov. 26	98.97

262. B. Bentley, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T. 10 N., R. 13 W. Drilled irrigation well, diameter 24 inches, depth 47 feet. Measuring point, top of concrete curb, flush with land surface and 120.88 feet above datum. Water level Oct. 9, 1930, 19.08 feet below measuring point.

Oct. 9, 1930	101.80	Mar. 7, 1932	102.40	Aug. 7, 1933	100.83
Nov. 5	102.06	Apr. 4	102.57	Sept. 18	100.77
Dec. 3	102.26	May 2	102.60	Oct. 18	100.76
Jan. 7, 1931	102.40	June 6	102.48	Nov. 16	100.99
Feb. 4	102.48	July 4	102.97	Dec. 18	101.14
Mar. 4	102.57	Aug. 1	101.84	Jan. 18, 1934	101.15
Apr. 1	102.66	Sept. 5	101.40	Feb. 19	101.42
May 6	103.07	Oct. 3	101.14	Mar. 19	101.53
June 3	103.19	Nov. 7	101.44	Apr. 17	101.58
July 7	102.29	Dec. 5	101.64	May 16	100.92
Aug. 4	100.89	Jan. 2, 1933	101.74	June 19	100.19
Sept. 1	100.00	Feb. 6	101.81	Aug. 20	99.56
Oct. 6	100.72	Mar. 6	101.93	Sept. 20	99.59
Nov. 2	100.92	Apr. 3	102.04	Nov. 3	99.75
Dec. 9	101.24	May 1	102.07	Dec. 21	99.96
Jan. 4, 1932	101.40	June 5	101.93	Feb. 18, 1935	100.19
Feb. 1	101.51	July 3	101.07	Apr. 13	100.41

a/ Pumping.

Buffalo County--Continued

262. B. Bentley.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 30, 1935	100.54	Nov. 18, 1935	100.30	July 13, 1936	100.15
July 1	101.33	Dec. 21	100.44	Aug. 5	99.32
Aug. 7	100.42	Jan. 10, 1936	100.11	20	99.24
Sept. 10	100.18	Mar. 21	100.88	Oct. 29	99.13
Oct. 14	100.13	May 27	100.49		

263. E. Stubblefield, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 9 N., R. 13 W. Drilled irrigation well, diameter 24 inches, depth 39.1 feet. Measuring point, top of wood curb, flush with land surface and 110.62 feet above datum. Water level Nov. 5, 1930, 8.75 feet below measuring point.

Nov. 5, 1930	101.87	Sept. 5, 1932	100.51	June 19, 1934	100.58
Dec. 3	102.12	Oct. 3	100.91	July 18	100.14
Jan. 7, 1931	102.25	Nov. 7	101.23	Aug. 20	99.51
Feb. 4	102.38	Dec. 5	101.44	Sept. 20	99.38
Mar. 4	102.47	Jan. 2, 1933	101.59	Nov. 3	99.62
Apr. 1	102.61	Feb. 6	101.73	Dec. 21	99.92
May 6	102.74	Mar. 6	100.92	Feb. 18, 1935	100.35
June 3	102.55	Apr. 3	102.08	Apr. 13	100.81
July 7	102.06	May 1	102.32	May 30	101.37
Sept. 1	100.31	June 5	102.01	July 1	101.99
Oct. 6	100.47	July 3	101.11	Aug. 8	100.71
Nov. 2	100.63	Aug. 7	100.67	Sept. 10	100.39
Dec. 9	100.99	Sept. 18	100.45	Oct. 14	100.32
Jan. 4, 1932	101.20	Oct. 18	100.54	Nov. 19	100.62
Feb. 1	101.25	Nov. 16	100.83	Dec. 21	101.19
Mar. 7	102.31	Dec. 18	101.10	Jan. 10, 1936	101.03
Apr. 4	102.41	Jan. 18, 1934	101.30	Mar. 21	101.64
May 2	102.34	Feb. 19	101.52	May 27	101.59
June 6	102.25	Mar. 19	101.73	July 13	100.44
July 4	102.60	Apr. 17	101.70	Aug. 5	99.81
Aug. 1	101.72	May 16	101.20	Aug. 20	99.53
				Oct. 29	99.49

264. B. Smith, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 9, T. 9 N., R. 13 W. Drilled irrigation well, diameter 24 inches, depth 61 feet. Measuring point, top of casing, flush with land surface and 114.68 feet above datum. Water level, Oct. 9, 1930, 12.42 feet below measuring point.

Oct. 9, 1930	102.26	July 4, 1932	102.66	May 16, 1934	101.23
Nov. 5	102.35	Aug. 1	102.58	June 19	100.87
Dec. 3	102.41	Oct. 3	102.30	July 18	100.59
Jan. 7, 1931	102.46	Nov. 7	102.15	Aug. 20	100.16
Feb. 4	102.45	Dec. 5	102.10	Sept. 20	100.10
Mar. 4	102.46	Jan. 2, 1933	102.04	Nov. 3	100.00
Apr. 1	102.48	Feb. 6	101.99	Dec. 21	99.99
May 6	102.53	Mar. 6	101.99	Feb. 18, 1935	100.05
June 3	102.64	Apr. 3	102.01	Apr. 13	100.20
July 7	102.51	May 1	102.03	May 30	100.34
Aug. 4	a/ 90.15	June 5	102.17	July 1	101.42
Sept. 1	101.84	July 3	101.85	Aug. 7	a/ 88.80
Oct. 6	101.73	Aug. 7	101.70	Sept. 10	100.90
Nov. 2	101.63	Sept. 18	101.51	Oct. 14	100.92
Dec. 9	101.55	Oct. 18	101.41	Nov. 19	100.86
Jan. 4, 1932	101.52	Nov. 16	101.32	Dec. 21	100.76
Feb. 1	101.49	Dec. 18	101.25	Jan. 10, 1936	100.86
Mar. 7	101.72	Jan. 18, 1934	101.23	Mar. 21	101.01
Apr. 4	101.85	Feb. 19	101.23	May 27	101.07
May 2	101.94	Mar. 19	101.25	July 13	100.62
June 6	102.04	Apr. 17	101.29	Oct. 29	99.45

a/ Pumping.

Buffalo County--Continued

265. F. Scott, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 9 N., R. 13 W. Drilled irrigation well, diameter 24 inches, depth 52 feet. Measuring point, top of pump base, flush with land surface and 120.29 feet above datum. Water level Nov. 5, 1930, 17.60 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 5, 1930	102.69	July 4, 1932	103.64	Mar. 19, 1934	101.83
Dec. 5	102.99	Aug. 1	102.25	Apr. 17	101.91
Jan. 7, 1931	103.19	Sept. 5	101.65	May 16	a/ 86.17
Feb. 4	103.27	Oct. 3	101.54	June 19	100.16
Mar. 4	103.33	Nov. 7	101.76	July 18	a/ 88.39
Apr. 1	103.41	Dec. 5	102.02	Aug. 20	99.66
May 6	103.67	Jan. 2, 1933	102.19	Sept. 20	99.28
June 2	103.61	Feb. 6	102.34	Nov. 3	99.69
July 7	102.63	Mar. 6	102.48	Dec. 22	99.96
Aug. 4	101.71	Apr. 3	102.59	Feb. 19, 1935	100.22
Sept. 1	101.21	May 1	102.66	Apr. 13	100.44
Oct. 6	101.15	June 5	102.72	May 30	100.60
Nov. 2	101.22	July 3	101.89	July 1	101.39
Dec. 9	101.50	Aug. 7	101.64	Nov. 19	100.59
Jan. 4, 1932	101.67	Sept. 18	101.17	Dec. 21	100.69
Feb. 1	101.81	Oct. 18	101.08	Jan. 10, 1936	100.78
Mar. 7	102.30	Nov. 16	101.23	Mar. 21	101.12
Apr. 4	102.60	Dec. 18	101.43	May 27	101.20
May 2	102.72	Jan. 18, 1934	101.59	Aug. 20	98.73
June 6	102.71	Feb. 19	101.72	Oct. 29	99.18

267. M. Davis, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 9 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 50 feet. Measuring point, top of 4- by 6-inch girder, 1.0 foot above land surface and 121.47 feet above datum. Water level Nov. 4, 1930, 18.73 feet below measuring point.

Nov. 4, 1930	102.74	Aug. 1, 1932	102.55	May 16, 1934	101.18
Dec. 2	102.80	Sept. 5	102.22	June 19	100.77
Jan. 6, 1931	102.74	Oct. 3	102.00	Sept. 20	99.82
Feb. 3	102.65	Nov. 7	102.01	Nov. 3	99.84
Mar. 4	102.48	Dec. 5	102.07	Dec. 22	99.97
Apr. 1	102.70	Jan. 2, 1933	102.09	Feb. 19, 1935	100.14
May 5	102.86	Feb. 6	102.08	Apr. 13	100.29
June 2	102.86	Mar. 6	102.13	May 30	100.45
July 7	102.75	Apr. 3	102.14	July 1	101.92
Aug. 4	a/ 94.97	May 1	102.21	Sept. 10	100.94
Sept. 1	101.54	June 5	102.25	Oct. 14	100.74
Oct. 6	101.32	July 3	101.79	Nov. 19	100.76
Nov. 2	101.32	Aug. 7	a/ 96.44	Dec. 21	100.80
Dec. 9	101.41	Sept. 18	101.36	Jan. 10, 1936	100.84
Jan. 4, 1932	101.45	Oct. 18	101.07	Mar. 23	101.12
Feb. 1	101.51	Nov. 16	101.11	May 27	101.10
Mar. 7	101.94	Dec. 18	101.22	July 13	100.49
Apr. 4	102.01	Jan. 18, 1934	101.22	Aug. 5	100.00
May 2	102.06	Feb. 19	101.31	Aug. 20	99.74
June 6	103.39	Mar. 19	101.37	Oct. 29	99.45
July 4	103.65	Apr. 19	101.42		

268. C. Nicholson, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 9 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 50 feet. Measuring point, top of concrete curb, 0.3 foot above land surface and 113.10 feet above datum. Water level Nov. 4, 1930, 10.64 feet below measuring point.

Nov. 4, 1930	102.46	July 7, 1931	102.46	Mar. 7, 1932	102.49
Dec. 2	102.68	Aug. 4	a/ 87.95	Apr. 4	102.46
Jan. 6, 1931	102.64	Sept. 1	100.80	May 2	102.39
Feb. 3	102.63	Oct. 6	100.94	June 6	102.69
Mar. 4	102.74	Nov. 2	101.23	July 4	103.38
Apr. 8	102.90	Dec. 9	101.58	Aug. 1	102.43
May 5	102.90	Jan. 4, 1932	102.78	Sept. 5	102.17
June 2	103.07	Feb. 1	101.93	Oct. 3	102.06

a/ Pumping.

Buffalo County--Continued

268. C. Nicholson.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 7, 1932	102.21	Dec. 18, 1933	101.60	Apr. 13, 1935	100.99
Dec. 5,	102.27	Jan. 18, 1934	101.74	May 30	101.51
Jan. 2, 1933	102.29	Feb. 19	101.84	July 1	102.05
Feb. 6	102.29	Mar. 19	101.89	Sept. 10	100.57
Mar. 6	102.41	Apr. 19	101.82	Oct. 14	100.74
Apr. 3	102.46	May 16	a/ 89.90	Nov. 19	100.94
May 1	102.67	June 19	101.02	Dec. 21	101.18
June 5	102.92	July 18	a/ 93.39	Jan. 10, 1936	101.22
July 3	102.27	Aug. 20	a/ 86.68	Mar. 23	101.64
Aug. 7	101.24	Sept. 20	99.40	May 27	101.54
Sept. 18	101.12	Nov. 3	99.67	July 13	99.92
Oct. 18	101.31	Dec. 22	99.88	Aug. 20	98.66
Nov. 16	101.47	Feb. 19, 1935	100.56	Oct. 29	99.15

269. W. Adair, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 9 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 55 feet. Measuring point, top of concrete curb, flush with land surface and 120.43 feet above datum. Water level Nov. 4, 1930, 18.04 feet below measuring point.

Nov. 4, 1930	102.39	Aug. 1, 1932	102.22	May 16, 1934	101.46
Dec. 2	102.46	Sept. 5	102.39	June 19	101.05
Jan. 6, 1931	102.50	Oct. 3	102.35	July 18	a/ 84.70
Feb. 3	102.47	Nov. 7	102.28	Aug. 20	99.43
Mar. 3	102.47	Dec. 5	102.25	Sept. 20	99.73
Apr. 7	102.54	Jan. 2, 1933	102.19	Nov. 3	99.94
May 5	102.59	Feb. 6	102.13	Dec. 22	99.99
June 2	102.73	Mar. 6	102.14	Feb. 19, 1935	100.06
July 7	102.72	Apr. 3	102.14	Apr. 13	100.22
Aug. 4	a/ 84.81	May 1	102.15	May 30	100.37
Sept. 1	101.28	June 5	102.42	July 1	100.88
Oct. 6	101.46	July 3	102.40	Aug. 7	99.40
Nov. 2	101.42	Aug. 7	a/ 82.46	Sept. 10	100.02
Dec. 9	101.44	Sept. 18	101.38	Oct. 14	100.42
Jan. 4, 1932	101.46	Oct. 18	101.42	Nov. 19	100.55
Feb. 1	101.50	Nov. 17	101.39	Dec. 21	100.60
Mar. 7	101.66	Dec. 18	101.37	Jan. 10, 1936	100.65
Apr. 4	101.85	Jan. 18, 1934	101.39	Mar. 23	100.76
May 2	101.98	Feb. 19	101.42	May 27	100.92
June 6	102.08	Mar. 19	101.45	Oct. 29	99.14
July 4	102.71	Apr. 19	101.48		

270. T. Lewis, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 9 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 54 feet. Measuring point, top of pump base, 0.8 foot above land surface and 125.67 feet above datum. Water level Nov. 4, 1930, 23.56 feet below measuring point.

Nov. 4, 1930	102.11	Mar. 7, 1932	101.36	July 3, 1933	101.99
Dec. 2	102.10	Apr. 4	101.61	Aug. 7	101.41
Jan. 6, 1931	102.21	May 2	101.73	Sept. 18	101.35
Feb. 3	102.22	June 6	101.86	Oct. 18	101.37
Mar. 3	102.23	July 4	102.31	Nov. 17	101.36
Apr. 7	102.26	Aug. 1	101.89	Dec. 19	101.34
May 5	102.30	Sept. 5	102.18	Jan. 18, 1934	101.34
June 2	102.40	Oct. 3	102.19	Feb. 19	101.34
July 7	102.26	Nov. 7	102.12	Mar. 19	101.36
Aug. 4	101.33	Dec. 5	102.09	Apr. 17	101.39
Sept. 1	101.52	Jan. 2, 1933	102.04	June 19	100.86
Oct. 6	101.46	Feb. 6	101.99	Aug. 20	99.73
Nov. 2	101.44	Mar. 7	102.05	Sept. 20	99.89
Dec. 9	101.37	Apr. 3	101.99	Nov. 3	99.98
Jan. 4, 1932	101.40	May 1	101.99	Dec. 22	100.00
Feb. 1	101.41	June 5	102.21	Feb. 19, 1935	100.01

a/ Pumping.

Buffalo County--Continued

270. T. Lewis.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 13, 1935	100.10	Oct. 14, 1935	100.46	Mar. 23, 1936	100.99
May 30	100.18	Nov. 19	100.74	May 27	101.10
July 1	101.05	Dec. 21	100.81	July 13	100.35
Aug. 7	99.63	Jan. 10, 1936	100.86	Oct. 29	99.47
Sept. 10	100.12				

271. C. Aldeen, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T. 9 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 57 feet. Measuring point, top of pump base, 0.7 foot above land surface and 124.85 feet above datum. Water level Nov. 4, 1930, 21.80 feet below measuring point.

Nov. 4, 1930	103.05	Aug. 1, 1932	102.76	May 16, 1934	100.95
Dec. 2	103.06	Sept. 5	102.37	June 19	100.63
Jan. 6, 1931	102.94	Oct. 3	102.09	July 18	99.91
Feb. 3	102.80	Nov. 7	102.02	Aug. 20	99.29
Mar. 3	102.74	Dec. 5	102.06	Sept. 20	99.59
Apr. 7	102.73	Jan. 2, 1933	102.04	Nov. 3	99.73
May 5	102.83	Feb. 6	102.02	Dec. 22	99.97
June 2	102.86	Mar. 7	102.03	Feb. 19, 1935	100.12
July 7	102.47	Apr. 3	102.02	Apr. 13	100.18
Aug. 4	102.21	May 1	102.04	May 30	100.19
Sept. 1	101.90	June 5	102.19	July 1	101.18
Oct. 6	101.67	July 3	101.74	Aug. 7	99.88
Nov. 2	101.60	Aug. 7	101.18	Sept. 10	100.23
Dec. 9	101.62	Sept. 18	101.17	Oct. 14	100.23
Jan. 4, 1932	101.65	Oct. 18	101.08	Nov. 19	100.32
Feb. 1	101.64	Nov. 17	100.99	Dec. 21	100.40
Mar. 7	102.06	Dec. 19	101.17	Jan. 10, 1936	100.41
Apr. 4	102.15	Jan. 18, 1934	101.21	Mar. 23	100.61
May 2	102.10	Feb. 19	101.26	May 27	100.36
June 6	102.44	Mar. 19	101.28	July 13	99.82
July 4	103.33	Apr. 17	101.28	Oct. 29	99.22

272. C. Aldeen, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 9 N., R. 15 W. Drilled well, diameter 24 inches, depth 53 feet. Measuring point, top of casing, 0.5 foot above land surface and 127.75 feet above datum. Water level Aug. 8, 1932, 25.69 feet below measuring point.

Aug. 8, 1932	102.06	Nov. 16, 1933	100.87	May 30, 1935	100.26
Sept. 5	101.66	Dec. 19	101.03	July 1	101.06
Oct. 3	101.48	Jan. 18, 1934	101.13	Aug. 7	100.20
Nov. 7	101.61	Feb. 19	101.20	Sept. 10	100.30
Dec. 5	101.74	Mar. 19	101.22	Oct. 14	100.19
Jan. 2, 1933	101.81	Apr. 17	101.27	Nov. 19	100.35
Feb. 6	101.84	May 16	100.75	Dec. 21	100.41
Mar. 6	101.89	June 19	100.35	Jan. 10, 1936	100.44
Apr. 3	101.91	July 18	99.96	Mar. 23	100.68
May 1	101.97	Aug. 20	99.57	May 27	100.43
June 5	102.01	Sept. 20	99.50	July 13	99.75
July 3	101.41	Nov. 3	99.66	Aug. 5	99.36
Aug. 7	101.08	Dec. 22	99.96	20	99.22
Sept. 18	100.84	Feb. 19, 1935	100.15	Oct. 29	99.32
Oct. 18	100.75	Apr. 13	100.22		

273. J. Wolford, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 9 N., R. 15 W. Drilled irrigation well, diameter 24 inches, depth 48 feet. Measuring point, top of 4- by 6-inch girder, 0.5 foot above land surface and 119.72 feet above datum. Water level Nov. 4, 1930, 17.78 feet below measuring point.

Nov. 4, 1930	101.94	May 5, 1931	102.08	Dec. 9, 1931	101.17
Dec. 2	102.02	June 2	102.29	Feb. 29, 1932	101.30
Jan. 6, 1931	102.01	July 7	101.87	Apr. 4	101.53
Feb. 3	102.02	Sept. 1	100.36	May 2	101.69
Mar. 3	101.77	Oct. 6	100.98	June 6	101.91
Apr. 7	101.72	Nov. 2	101.06	July 4	101.89

Buffalo County--Continued

273. J. Wolford.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1932	100.99	Sept. 18, 1933	100.74	Dec. 22, 1934	99.98
Sept. 5	100.38	Oct. 18	100.96	Feb. 19, 1935	100.08
Oct. 3	101.49	Nov. 17	101.04	Apr. 13	100.19
Nov. 7	101.58	Dec. 19	101.19	May 30	100.23
Dec. 5	101.63	Jan. 18, 1934	101.23	July 1	100.89
Jan. 2, 1933	101.64	Feb. 20	101.26	Sept. 10	99.60
Feb. 6	101.64	Mar. 20	101.33	Oct. 14	100.13
Mar. 7	101.68	Apr. 17	101.32	Nov. 19	100.30
Apr. 3	101.70	May 17	100.88	Dec. 21	100.38
May 1	101.69	June 19	100.22	Jan. 10, 1936	100.44
June 5	101.98	Aug. 20	98.80	Mar. 23	100.54
July 3	101.35	Sept. 20	99.51	May 27	100.64
Aug. 7	100.68	Nov. 3	99.82	Oct. 29	97.99

274. M. Garvin, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 8 N., R. 16 W. Drilled irrigation well, diameter 18 inches, depth 28.5 feet. Measuring point, top of casing, 0.3 foot above land surface and 106.35 feet above datum. Water level Oct. 8, 1930, 4.93 feet below measuring point.

Oct. 8, 1930	101.42	Oct. 19, 1933	101.62	Apr. 15, 1935	101.23
Nov. 4	101.69	Nov. 17	101.81	June 10	103.37
Aug. 9, 1932	100.73	Dec. 19	101.75	July 1	102.28
Sept. 6	100.19	Jan. 19, 1934	101.97	Aug. 8	100.30
Oct. 4	100.39	Feb. 20	101.93	Sept. 10	100.80
Nov. 1	101.41	Mar. 20	101.76	Oct. 14	100.13
Dec. 6	101.70	Apr. 18	101.86	Nov. 19	100.91
Jan. 3, 1933	102.35	May 17	101.16	Dec. 21	101.31
Feb. 7	101.99	June 20	100.06	Jan. 10, 1936	101.55
Mar. 7	102.07	July 18	99.60	Mar. 23	102.01
Apr. 4	101.89	Aug. 21	99.24	May 28	101.79
May 2	103.20	Sept. 21	99.18	July 14	100.05
June 6	102.18	Nov. 3	99.09	Aug. 20	99.31
July 4	100.82	Dec. 22	99.62	Oct. 29	99.00
Sept. 19	101.01	Feb. 19, 1935	101.88		

278. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 8 N., R. 17 W. Driven well, diameter 1 inch, depth 18 feet. Measuring point, top of pipe, 1.2 feet above land surface and 112.28 feet above datum. Water level Oct. 12, 1931, 12.08 feet below measuring point.

Oct. 12, 1931	100.20	May 30, 1933	103.67	Dec. 22, 1934	99.88
Nov. 3	100.40	July 4	102.92	Feb. 19, 1935	100.50
Jan. 26, 1932	101.89	Aug. 1	101.83	Apr. 23	101.22
Mar. 1	103.00	Sept. 20	102.00	June 11	102.73
May 3	102.66	Oct. 19	100.95	July 1	102.61
May 31	101.82	Nov. 17	101.20	Aug. 8	101.26
June 28	103.08	Dec. 19	101.55	Sept. 10	100.76
Aug. 2	103.24	Jan. 19, 1934	101.75	Oct. 14	100.64
Aug. 30	102.22	Feb. 20	102.02	Nov. 19	100.92
Oct. 4	101.26	Mar. 20	102.19	Dec. 21	101.28
Nov. 1	101.25	Apr. 18	102.20	Jan. 10, 1936	101.51
Nov. 29	101.58	May 17	101.53	Mar. 23	102.26
Jan. 3, 1933	101.91	June 18	100.73	May 28	102.40
Feb. 31	102.17	July 17	100.38	July 14	101.55
Feb. 28	102.29	Sept. 21	99.22	Aug. 20	100.18
Apr. 4	102.63	Nov. 3	99.18	Oct. 30	99.72
May 2	103.66				

Buffalo County--Continued

279. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 8 N., R. 17 W. Driven well, diameter 1 inch, depth 9.6 feet. Measuring point, top of pipe, 1.0 foot above land surface and 102.49 feet above datum. Water level Oct. 12, 1931, 4.45 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 12, 1931	98.04	May 2, 1933	99.92	Nov. 3, 1934	97.54
Jan. 5, 1932	100.11	30	100.00	Dec. 22	100.04
Feb. 2	99.84	July 4	98.14	Feb. 19, 1935	99.96
Mar. 1	100.35	Aug. 1	97.85	Apr. 23	98.75
Mar. 29	100.06	Sept. 20	99.79	June 11	100.48
May 3	99.85	Oct. 19	99.59	July 1	99.85
May 31	99.76	Nov. 17	99.93	Aug. 8	98.04
June 28	99.75	Dec. 19	100.31	Sept. 10	99.47
Aug. 2	99.04	Jan. 19, 1934	100.79	Oct. 14	98.69
Aug. 30	98.01	Feb. 20	100.78	Nov. 19	99.99
Oct. 4	98.79	Mar. 20	100.07	Dec. 21	100.14
Nov. 1	99.90	Apr. 18	99.68	Jan. 10, 1936	100.90
Nov. 29	100.03	May 17	98.75	Mar. 23	99.12
Jan. 3, 1933	100.62	June 18	97.96	May 28	99.10
Jan. 31	100.43	July 17	97.58	Aug. 20	97.24
Feb. 28	100.36	Sept. 21	97.37	Oct. 30	97.24
Apr. 4	99.59				

Burt County

63. J. Calnon, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 24 N., R. 10 E. Dug well, diameter 36 inches, depth 37.7 feet. Measuring point, top of manhole cover support, 0.4 foot above land surface and 133.19 feet above datum. Water level Aug. 14, 1934, 33.20 feet below measuring point.

Aug. 14, 1934	99.99	July 5, 1935	103.63	Jan. 7, 1936	99.08
Oct. 29	99.16	Aug. 3	101.52	Mar. 19	101.68
Dec. 15	99.79	Sept. 6	99.45	May 24	101.09
Feb. 12, 1935	100.48	Oct. 10	98.54	July 9	100.64
Apr. 10	100.73	Nov. 15	98.69	Aug. 1	98.93
May 27	101.47	Dec. 19	98.77	Oct. 24	97.90

64. G. Ott, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 21 N., R. 11 E. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 46.4 feet. Measuring point, top of pipe, 0.7 foot above land surface and 111.56 feet above datum. Water level Oct. 29, 1934, 11.78 feet below measuring point.

Oct. 29, 1934	99.78	Aug. 3, 1935	101.68	Mar. 19, 1936	102.19
Dec. 15	100.02	Sept. 6	100.99	May 23	101.89
Feb. 12, 1935	99.98	Oct. 10	100.35	July 9	100.91
Apr. 10	100.62	Nov. 15	100.33	Aug. 1	100.40
May 27	101.12	Dec. 19	100.27	Oct. 24	100.16
July 5	101.64	Jan. 7, 1936	100.30		

Butler County

170. Helgoth estate, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 8, T. 14 N., R. 3 E. Dug well, diameter 36 inches, depth 36 feet. Measuring point, top of iron plate, 0.6 foot above land surface and 127.58 feet above datum. Water level Oct. 5, 1934, 27.48 feet below measuring point.

Oct. 5, 1934	100.10	Aug. 29, 1935	100.97	Mar. 17, 1936	99.96
Nov. 1	100.03	Oct. 1	100.27	May 20	99.86
Dec. 19	100.03	8	100.17	July 7	99.21
Feb. 16, 1935	99.88	Nov. 13	99.89	29	98.97
June 30	101.44	Dec. 17	99.78	Oct. 16	98.48
July 25	101.46	Jan. 4, 1936	99.74		

Cass County

16. J. Wiedeman, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 12 N., R. 9 E. Drilled well, diameter 3 inches, depth 88.6 feet. Measuring point, top of manhole base, 0.5 foot above land surface and 141.01 feet above datum. Water level July 24, 1934, 40.93 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 24, 1934	100.08	July 2, 1935	100.26	Jan. 4, 1936	100.09
Oct. 25	99.93	31	100.31	Mar. 17	100.42
Dec. 13	100.01	Sept. 4	100.02	May 20	100.43
Feb. 9, 1935	99.98	Oct. 8	99.89	July 7	99.81
Apr. 6	100.03	Nov. 13	99.93	29	99.59
Mar. 24	100.03	Dec. 17	99.92	Oct. 16	99.33

17. I. Creamer, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 16, T. 10 N., R. 10 E. Bored well, diameter 8 inches, depth 50.5 feet. Measuring point, top of casing, 1.2 feet above land surface and 145.51 feet above datum. Water level July 24, 1934, 45.37 feet below measuring point.

July 24, 1934	100.14	July 2, 1935	99.98	Jan. 4, 1936	99.91
Oct. 25	100.02	31	99.94	Mar. 18	99.87
Dec. 13	99.99	Sept. 4	99.75	May 21	99.58
Feb. 11, 1935	100.02	Oct. 9	99.93	July 7	99.46
Apr. 4	100.12	Nov. 14	99.73	30	99.21
May 24	99.86	Dec. 18	99.89	Oct. 17	99.24

18. W. Stine, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 26, T. 10 N., R. 13 E. Dug well, diameter 48 inches, depth 21.7 feet. Measuring point, top of wooden platform, 2.5 feet above land surface and 119.71 feet above datum. Water level Oct. 24, 1934, 20.15 feet below measuring point.

Oct. 24, 1934	99.56	Aug. 1, 1935	102.56	Mar. 18, 1936	104.56
Dec. 13	100.17	Sept. 4	100.21	May 21	104.57
Feb. 11, 1935	99.64	Oct. 9	100.54	July 7	102.26
Apr. 4	99.85	Nov. 14	101.87	30	101.17
May 24	101.35	Dec. 18	102.35	Oct. 19	100.78
July 3	103.48	Jan. 6, 1936	102.00		

Cedar County

65. C. Ebmeier, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T. 28 N., R. 3 E. Bored well, diameter 6 inches, depth 16.6 feet. Measuring point, top of casing, 1.7 feet above land surface and 110.28 feet above datum. Water level Aug. 15, 1934, 10.90 feet below measuring point.

Aug. 15, 1934	99.38	July 6, 1935	101.25	Jan. 8, 1936	99.79
Oct. 31	99.56	Aug. 5	100.92	Mar. 20	101.79
Dec. 18	99.91	Sept. 7	100.18	May 25	101.89
Feb. 13, 1935	100.33	Oct. 11	99.26	July 11	99.69
Apr. 11	101.38	Nov. 16	99.44	Aug. 2	98.98
May 28	101.88	Dec. 20	99.69	Oct. 27	98.66

66. J. Leise, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 31 N., R. 2 E. Bored well, diameter 18 inches, depth 21.8 feet. Measuring point, top of casing, 1.1 feet above land surface and 113.75 feet above datum. Water level Aug. 15, 1934, 14.10 feet below measuring point.

Aug. 15, 1934	99.65	July 6, 1935	99.81	Jan. 8, 1936	100.87
Oct. 31	99.79	Aug. 5	100.30	Mar. 20	100.37
Dec. 18	99.92	Sept. 7	99.99	May 25	100.05
Feb. 13, 1935	100.23	Oct. 11	99.99	July 10	99.26
Apr. 11	100.48	Nov. 16	100.07	Aug. 2	99.28
May 28	100.16	Dec. 20	100.21	Oct. 26	99.52

Cedar County--Continued

369. H. Kleinberg, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 32 N., R. 2 E. Bored well, diameter 10 inches, depth 21.5 feet. Measuring point, top of casing, 0.9 foot above land surface and 120.35 feet above datum. Water level Nov. 16, 1935, 19.80 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 16, 1935	100.55	Mar. 20, 1936	101.02	Aug. 2, 1936	100.70
Dec. 19	100.56	May 25	101.11	Oct. 26	100.64
Jan. 8, 1936	100.60	July 10	101.18		

Chase County

152. A. Banks, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 7 N., R. 38 W. Drilled well, diameter 6 inches, depth to pump cylinder 89.6 feet. Measuring point, top of iron plate, 1.2 feet above land surface and 170.13 feet above datum. Water level Sept. 24, 1934, 70.17 feet below measuring point.

Sept. 24, 1934	99.96	July 19, 1935	99.95	Jan. 23, 1936	99.91
Nov. 20	100.01	Aug. 21	100.15	Apr. 1	99.78
Jan. 11, 1935	100.00	Sept. 25	99.97	June 11	99.80
Mar. 9	99.91	Oct. 27	100.00	Aug. 9	99.77
Apr. 29	99.82	Nov. 30	99.83	Sept. 17	99.80
June 16	99.97	Jan. 3, 1936	99.88	Dec. 5	99.70

153. J. Redden, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 11, T. 5 N., R. 36 W. Drilled well, diameter 8 inches, depth 71.6 feet. Measuring point, top of iron plate, base, 0.6 foot above land surface and 164.09 feet above datum. Water level Sept. 24, 1934, 64.37 feet below measuring point.

Sept. 24, 1934	99.72	July 19, 1935	99.91	Jan. 23, 1936	100.15
Nov. 21	99.90	Aug. 21	99.54	Apr. 2	100.15
Jan. 12, 1935	100.03	Sept. 25	99.58	June 11	100.42
Mar. 9	100.08	Oct. 27	99.84	Aug. 9	99.79
Apr. 29	100.00	Nov. 30	99.90	Sept. 17	99.55
June 17	100.50	Jan. 3, 1936	100.03	Dec. 5	99.98

Cherry County

115. Nebraska Agriculture College, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 34 N., R. 27 W. Drilled well, diameter 2 inches, depth 127.5 feet. Measuring point, top of manhole base, 0.7 foot above land surface and 198.80 feet above datum. Water level Aug. 25, 1934, 98.72 feet below measuring point.

Aug. 25, 1934	100.08	July 13, 1935	100.00	Jan. 16, 1936	99.70
Nov. 9	99.98	Aug. 13	99.83	Mar. 26	99.67
Jan. 2, 1935	100.00	Sept. 13	99.97	June 1	99.68
Feb. 23	100.03	Oct. 21	99.80	July 18	99.61
Apr. 18	99.93	Nov. 23	99.75	Sept. 12	99.56
June 5	99.91	Dec. 27	99.78	Nov. 20	99.50

118. A. Nielson, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 33 N., R. 39 W. Drilled well, diameter 4 inches, depth 14.8 feet. Measuring point, top of casing, 0.1 foot above land surface and 104.73 feet above datum. Water level Aug. 26, 1934, 4.51 feet below measuring point.

Aug. 26, 1934	100.22	July 13, 1935	101.65	Dec. 27, 1935	100.50
Nov. 9	99.86	Aug. 13	101.15	Jan. 16, 1936	100.36
Jan. 3, 1935	100.01	Sept. 13	100.70	Mar. 26	100.52
Feb. 24	99.79	Oct. 21	100.49	Sept. 12	99.69
Apr. 18	100.19	Nov. 23	100.44	Nov. 21	99.62
June 6	101.45				

Cherry County--Continued

256. University of Nebraska, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 34 N., R. 36 W. Driven well, diameter 1 inch, depth 21.1 feet. Measuring point, top of pipe, 1.6 feet above land surface and 108.27 feet above datum. Water level Dec. 12, 1934, 8.28 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 12, 1934	99.99	Aug. 13, 1935	100.34	Mar. 26, 1936	100.35
Jan. 3, 1935	100.00	Sept. 13	99.98	June 1	100.20
Feb. 24	100.27	Oct. 21	99.94	July 18	99.72
Apr. 18	101.22	Nov. 23	99.98	Sept. 12	99.30
June 6	102.21	Dec. 27	99.96	Nov. 20	99.55
July 13	101.02	Jan. 16, 1936	99.95		

257. University of Nebraska, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 34 N., R. 31 W. Driven well, diameter 1 inch, depth 17.2 feet. Measuring point, top of pipe, 2.0 feet above land surface and 105.93 feet above datum. Water level Dec. 12, 1934, 5.98 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 12, 1934	99.95	Aug. 13, 1935	99.52	Mar. 26, 1936	100.64
Jan. 3, 1935	100.01	Sept. 13	99.36	June 1	100.75
Feb. 24	100.32	Oct. 21	100.11	July 18	99.06
Apr. 18	101.31	Nov. 23	99.93	Sept. 12	98.84
June 6	102.68	Dec. 27	100.08	Nov. 20	99.68
July 13	100.64	Jan. 16, 1936	100.16		

312. R. Osborne, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 26 N., R. 32 W. Drilled well, diameter 2 inches, depth 174 feet. Measuring point, top of pipe, 3.2 feet above land surface and 162.97 feet above datum. Water level Nov. 13, 1934, 63.04 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 13, 1934	99.93	July 15, 1935	99.73	Dec. 30, 1935	99.85
Jan. 5, 1935	100.01	Sept. 16	99.78	Jan. 18, 1936	99.53
Apr. 20	99.83	Oct. 23	99.39	Mar. 27	99.89
June 8	99.89	Nov. 26	99.93	Aug. 27	99.65

Cheyenne County

86. A. Thompson, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 16 N., R. 49 W. Drilled well, diameter 6 inches, depth 182.8 feet. Measuring point, top of wood cover, 0.5 foot above land surface and 279.94 feet above datum. Water level Aug. 30, 1934, 179.92 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 30, 1934	100.02	June 15, 1935	100.09	Jan. 3, 1936	99.83
Nov. 16	100.09	July 18	99.98	23	99.83
Jan. 10, 1935	99.98	Sept. 19	100.13	Apr. 1	99.81
Mar. 8	100.12	Oct. 26	99.98	Aug. 8	99.93
Apr. 28	99.95	Nov. 30	99.88	30	100.02

87. A. Linn, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 2, T. 15 N., R. 49 W. Drilled well, diameter 6 inches, depth 218.3 feet. Measuring point, top of casing, 0.5 foot above land surface and 294.46 feet above datum. Water level Aug. 30, 1934, 194.35 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 30, 1934	100.11	July 18, 1935	99.94	Jan. 23, 1936	99.65
Nov. 16	100.12	Aug. 21	99.71	Apr. 1	99.91
Jan. 10, 1935	99.98	Sept. 19	99.91	Aug. 8	99.93
Mar. 8	100.10	Oct. 26	99.92	30	100.06
Apr. 28	99.78	Nov. 30	99.67	Dec. 4	99.98
June 15	100.19	Jan. 3, 1936	100.06		

Cheyenne County--Continued

90. W. Goding, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 14 N., R. 52 W. Drilled irrigation well, diameter 8 inches, depth 55.1 feet. Measuring point, top of concrete-pit wall, 0.7 foot above land surface and 128.52 feet above datum. Water level Sept. 4, 1934, 28.48 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 4, 1934	100.04	Aug. 20, 1935	100.53	Apr. 1, 1936	100.21
Nov. 19	99.93	Sept. 19	100.55	June 9	100.20
Jan. 10, 1935	100.02	Oct. 26	100.47	Aug. 8	99.95
Mar. 5	99.97	Nov. 29	100.37	29	100.05
Apr. 27	99.97	Jan. 2, 1936	100.37	Dec. 3	100.06
June 15	101.18	22	100.34		

91. F. Mather estate, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 14 N., R. 50 W. Drilled irrigation well, diameter 24 inches, depth 91.3 feet. Measuring point, top of 2- by 4-inch board at hole, 1.5 feet above land surface and 131.87 feet above datum. Water level Sept. 4, 1934, 31.67 feet below measuring point.

Sept. 4, 1934	100.20	July 18, 1935	101.20	Jan. 22, 1936	100.45
Nov. 19	100.06	Aug. 20	100.60	Apr. 1	100.71
Jan. 10, 1935	99.99	Sept. 19	100.51	June 10	100.45
Mar. 5	100.04	Oct. 26	100.36	Aug. 8	99.97
Apr. 27	100.27	Nov. 29	100.33	28	100.04
June 15	101.05	Jan. 2, 1936	100.40	Dec. 4	99.87

92. G. Fay, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 12 N., R. 51 W. Drilled well, diameter 6 inches, depth 134.2 feet. Measuring point, top of casing, 1.2 feet above land surface and 207.65 feet above datum. Water level Sept. 4, 1934, 107.58 feet below measuring point.

Sept. 4, 1934	100.07	July 18, 1935	100.00	Jan. 22, 1936	99.98
Nov. 19	100.20	Aug. 20	99.94	Apr. 1	99.92
Jan. 10, 1935	99.96	Sept. 19	99.98	Aug. 8	100.07
Mar. 8	100.19	Oct. 26	100.10	30	100.09
Apr. 28	99.90	Nov. 30	99.90	Dec. 4	100.17
June 15	100.23	Jan. 3, 1936	100.12		

Clay County

391. A. Kyne, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 5 N., R. 7 W. Drilled well, diameter 3 inches, depth 88 feet. Measuring point, top of casing, 0.9 foot above land surface and 181.67 feet above datum. Water level Dec. 6, 1935, 81.96 feet below measuring point.

Dec. 6, 1935	99.71	June 15, 1936	99.66	Sept. 22, 1936	99.63
Jan. 8, 1936	99.82	Aug. 13	99.62	Dec. 13	99.62
Apr. 5	99.62				

Colfax County

37. H. Schlemmer, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 17 N., R. 4 E. Dug well, diameter 30 inches, depth 13.4 feet. Measuring point, top of iron plate, 0.5 foot above land surface and 108.07 feet above datum. Water level Aug. 4, 1934, 8.85 feet below measuring point.

Aug. 4, 1934	99.22	July 5, 1935	100.73	Jan. 6, 1936	99.96
Nov. 1	99.60	Aug. 2	99.58	Mar. 18	101.03
Dec. 19	99.88	Sept. 5	99.63	May 22	100.42
Feb. 11, 1935	100.43	Oct. 9	99.43	July 9	99.55
Apr. 9	100.03	Nov. 14	99.70	31	99.17
May 25	101.32	Dec. 18	99.95	Oct. 21	99.58

Colfax County--Continued

38. Reisch Co., SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 17 N., R. 2 E. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 19.2 feet. Measuring point, top of pipe, 2.2 feet above land surface and 111.89 feet above datum. Water level Aug. 3, 1934, 11.98 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 3, 1934	99.91	July 5, 1935	102.10	Jan. 6, 1936	101.55
Nov. 1	99.75	Aug. 2	101.13	Mar. 18	102.28
Dec. 19	100.00	Sept. 5	101.05	May 22	101.58
Feb. 11, 1935	100.01	Oct. 9	100.79	July 9	100.83
Apr. 9	100.54	Nov. 14	100.89	31	100.50
May 25	101.84	Dec. 18	101.14	Oct. 21	100.45

332. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 20 N., R. 4 E. Bored well, diameter 3 inches, depth 23.4 feet. Measuring point, top of casing, 1.8 feet above land surface and 116.21 feet above datum. Water level Aug. 2, 1935, 12.46 feet below measuring point.

Aug. 2, 1935	103.75	Dec. 19, 1935	100.67	July 9, 1936	99.57
Sept. 6	102.18	Jan. 7, 1936	100.54	31	98.63
Oct. 10	101.01	Mar. 19	102.32	Oct. 23	97.97
Nov. 15	100.77	May 22	101.80		

343. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 20 N., R. 2 E. Bored well, diameter 3 inches, depth 15.5 feet. Measuring point, top of casing, 1.3 feet above land surface and 111.38 feet above datum. Water level Nov. 15, 1935, 11.59 feet below measuring point.

Nov. 15, 1935	99.79	Mar. 19, 1936	102.56	July 31, 1936	98.76
Dec. 19	100.30	May 22	101.87	Oct. 23	100.32
Jan. 7, 1936	100.35	July 9	99.45		

Cuming County

61. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 23 N., R. 7 E. Bored well, diameter 3 inches, depth 21.4 feet. Measuring point, top of casing, 2.0 feet above land surface and 116.67 feet above datum. Water level Aug. 14, 1934, 16.74 feet below measuring point.

Aug. 14, 1934	99.93	July 5, 1935	101.26	Jan. 7, 1936	100.11
Oct. 30	99.66	Aug. 3	100.61	Mar. 19	103.30
Dec. 15	99.97	Sept. 6	100.56	May 25	101.15
Feb. 12, 1935	100.09	Oct. 10	100.21	July 9	100.22
Apr. 10	100.23	Nov. 15	100.21	Oct. 25	99.47
May 27	100.79	Dec. 19	100.13		

69. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 21 N., R. 6 E. Driven well, diameter 1 inch, depth 17 feet. Measuring point, top of pipe, 1.3 feet above land surface and 107.79 feet above datum. Water level Aug. 16, 1934, 7.91 feet below measuring point.

Aug. 16, 1934	99.88	July 5, 1935	100.49	Jan. 7, 1936	99.77
Oct. 29	99.92	Aug. 3	100.04	Mar. 19	100.37
Dec. 15	100.00	Sept. 6	99.83	May 23	100.04
Feb. 12, 1935	100.00	Oct. 10	99.74	July 9	99.41
Apr. 10	100.19	Nov. 15	99.74	Oct. 24	99.24
May 27	100.75	Dec. 19	99.66		

Custer County

53. L. Owen, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 9, T. 19 N., R. 18 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 28.4 feet. Measuring point, top of pipe, 1.0 foot above land surface and 114.98 feet above datum. Water level Aug. 9, 1934, 15.78 feet below measuring point.

Aug. 9, 1934	99.20	Feb. 20, 1935	100.15	July 10, 1935	100.66
Nov. 5	99.79	Apr. 15	100.08	Aug. 8	99.93
Dec. 28	99.98	June 10	100.57	Sept. 11	99.32

Custer County--Continued

53. L. Owen.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 15, 1935	100.19	Jan. 11, 1936	100.59	May 29, 1936	100.50
Nov. 20	100.46	Mar. 23	100.79	Nov. 5	99.80
Dec. 22	100.47				

195. C. Cooper, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 16, T. 15 N., R. 18 W. Drilled well, diameter 4 inches, depth 88.5 feet. Measuring point, top of casing, 2.1 feet above land surface and 115.60 feet above datum. Water level Oct. 10, 1934, 16.14 feet below measuring point.

Oct. 10, 1934	99.46	July 10, 1935	100.47	Mar. 23, 1936	99.43
Nov. 13	99.75	Aug. 8	99.82	May 28	99.32
Jan. 7, 1935	100.02	Sept. 10	99.88	July 14	98.80
Feb. 27	100.15	Oct. 15	99.67	Sept. 15	98.55
Apr. 23	100.30	Dec. 22	99.24	Nov. 4	98.70
June 10	100.61	Jan. 11, 1936	99.23		

196. W. Crouch, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 19 N., R. 22 W. Drilled well, diameter 3 inches, depth 28.8 feet. Measuring point, top of pipe, 0.9 foot above land surface and 120.76 feet above datum. Water level Oct. 10, 1934, 20.91 feet below measuring point.

Oct. 10, 1934	99.85	July 16, 1935	100.72	Jan. 18, 1936	100.28
Nov. 13	99.88	Aug. 16	100.19	Mar. 27	100.21
Jan. 7, 1935	100.02	Sept. 16	100.25	June 3	100.06
Feb. 27	100.01	Oct. 23	100.06	July 21	99.48
Apr. 20	99.98	Nov. 27	100.21	Aug. 26	99.30
June 8	100.93	Dec. 31	100.11	Nov. 25	99.60

219. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 2, T. 15 N., R. 23 W. Driven well, diameter 1 inch, depth 11.9 feet. Measuring point, top of pipe, 2.1 feet above land surface and 104.55 feet above datum. Water level Nov. 8, 1934, 5.38 feet below measuring point.

Nov. 8, 1934	99.17	Aug. 16, 1935	98.42	Mar. 28, 1936	101.77
Dec. 26	99.86	Sept. 17	99.01	June 4	102.08
Feb. 27, 1935	101.04	Oct. 24	99.39	July 22	99.09
Apr. 23	100.68	Nov. 27	100.17	Aug. 26	98.59
June 12	100.28	Dec. 31	100.55	Nov. 26	99.56
July 16	99.57	Jan. 20, 1936	100.93		

220. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 17 N., R. 25 W. Driven well, diameter 1 inch, depth 10 feet. Measuring point, top of pipe, 0.8 foot above land surface and 104.60 feet above datum. Water level Nov. 9, 1934, 4.81 feet below measuring point.

Nov. 9, 1934	99.79	Aug. 16, 1935	98.83	Mar. 28, 1936	100.53
Dec. 26	99.98	Sept. 16	99.56	June 4	100.23
Feb. 27, 1935	100.24	Oct. 24	99.75	July 21	98.81
Apr. 23	100.42	Nov. 27	100.06	Aug. 26	98.87
June 12	100.70	Dec. 31	100.08	Nov. 25	99.99
July 16	99.67	Jan. 20, 1936	100.15		

325. C. Cooper, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 10, T. 15 N., R. 18 W. Drilled well, diameter 6 inches, depth 27.3 feet. Measuring point, top of casing, 1.1 feet above land surface and 113.81 feet above datum. Water level Jan. 7, 1935, 13.74 feet below measuring point.

Jan. 7, 1935	100.07	Aug. 8, 1935	100.15	Jan. 11, 1936	100.00
Feb. 27	100.77	Sept. 10	100.97	Mar. 23	101.40
Apr. 23	101.69	Oct. 15	101.14	May 28	100.68
June 10	102.13	Nov. 19	100.09	July 14	99.25
July 10	101.69	Dec. 22	100.15	Sept. 15	97.81

Dakota County

104. R. Nelson, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 27 N., R. 8 E. Bored well, diameter 8 inches, depth 36.6 feet. Measuring point, top of wooden platform, 0.6 foot above land surface and 120.03 feet above datum. Water level Aug. 13, 1934, 24.42 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 13, 1934	95.61	July 6, 1935	99.57	Jan. 8, 1936	99.34
Oct. 30	98.15	Aug. 3	97.32	Mar. 20	105.95
Dec. 17	99.64	Sept. 6	96.65	May 25	101.88
Feb. 13, 1935	101.02	Oct. 11	96.38	July 10	96.54
Apr. 11	102.22	Nov. 16	98.19	Aug. 1	95.27
May 28	102.73	Dec. 19	99.00	Oct. 25	95.49

105. W. Harnett, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 29 N., R. 7 E. Dug well, diameter 24 inches, depth 23.1 feet. Measuring point, top of casing, flush with land surface and 115.04 feet above datum. Water level Aug. 14, 1934, 14.95 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 14, 1934	100.09	July 6, 1935	100.38	Jan. 8, 1936	98.54
Oct. 30	99.15	Aug. 3	99.25	Mar. 20	101.69
Dec. 17	99.78	Sept. 7	98.46	May 25	102.00
Feb. 13, 1935	100.64	Oct. 11	98.19	July 10	100.62
Apr. 11	100.81	Nov. 16	98.28	Aug. 1	99.37
May 28	101.04	Dec. 19	98.36	Oct. 26	98.94

Dawes County

123. T. Moody, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 31 N. R. 52 W. Bored well, diameter 8 inches, depth 39.2 feet. Measuring point, top of iron plate, 1.1 feet above land surface and 122.13 feet above datum. Water level Aug. 27, 1934, 22.58 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 27, 1934	99.55	July 14, 1935	102.27	Jan. 17, 1936	100.94
Nov. 10	99.79	Aug. 14	101.55	Mar. 26	101.13
Jan. 4, 1935	100.02	Sept. 14	101.12	June 2	101.03
Feb. 25	100.16	Oct. 22	100.80	July 21	100.26
Apr. 19	100.42	Nov. 25	101.04	Sept. 11	99.75
June 7	102.11	Dec. 28	101.00	Nov. 23	100.51

315. A. McIntyre, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 33 N., R. 48 W. Dug well, diameter 72 inches, depth 73.9 feet. Measuring point, top of wood curb, 3.2 feet above land surface and 173.44 feet above datum. Water level Nov. 9, 1934, 71.89 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 9, 1934	101.55	Aug. 14, 1935	101.25	Mar. 26, 1936	102.75
Jan. 3, 1935	99.94	Sept. 14	100.69	June 1	103.64
Feb. 25	100.81	Oct. 22	100.73	July 20	112.01
Apr. 18	100.47	Nov. 23	100.21	Sept. 11	116.18
June 6	101.34	Dec. 28	99.91	Nov. 23	118.92
July 14	101.62	Jan. 17, 1936	99.98		

396. W. Howard, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 32 N., R. 51 W. Dug well, diameter 48 inches, depth 26 feet. Measuring point, top of wood platform, 1.2 feet above land surface and 121.07 feet above datum. Water level Dec. 28, 1935, 20.48 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 28, 1935	100.59	June 2, 1936	100.59	Sept. 11, 1936	100.49
Jan. 17, 1936	100.59	July 20	100.55	Nov. 23	100.52
Mar. 26	100.62				

Dawson County

99. L. Tell estate, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 9 N., R. 25 W. Drilled well, diameter 6 inches, depth 207.6 feet. Measuring point, top of iron plate, 0.7 foot above land surface and 293.61 feet above datum. Water level Sept. 22, 1934, 193.34 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 22, 1934	100.27	July 22, 1935	99.89	Jan. 7, 1936	99.72
Nov. 15	100.00	Aug. 24	99.84	25	99.60
Jan. 14, 1935	100.00	Sept. 26	99.58	Aug. 12	99.53
Mar. 1	100.35	Oct. 30	100.20	Sept. 21	99.65
May 2	100.54	Dec. 4	99.75	Dec. 10	99.63
June 18	99.91				

233. A. Scoville, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 11 N., R. 19 W. Drilled irrigation well, diameter 10 inches, depth 37.9 feet. Measuring point, top of 4- by 6-inch brace, 20.1 feet below land surface and 113.00 feet above datum. Water level Oct. 9, 1934, 13.47 feet below measuring point.

Oct. 9, 1934	99.53	July 16, 1935	100.29	Dec. 31, 1935	100.26
Nov. 13	99.69	Aug. 16	99.74	Jan. 20, 1936	100.31
Dec. 26	99.98	Sept. 17	99.87	Mar. 28	100.55
Apr. 23, 1935	100.34	Oct. 24	99.86	June 4	100.49
June 11	100.61	Nov. 27	100.01	Aug. 26	99.20

280. J. Brick, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 9 N., R. 20 W. Drilled irrigation well, diameter 18 inches, depth 43 feet. Measuring point top of concrete curb, 1.0 foot above land surface and 113.40 feet above datum. Water level Nov. 3, 1930, 10.61 feet below land surface.

Nov. 3, 1930	102.79	Sept. 6, 1932	101.09	June 18, 1934	100.83
Dec. 2	103.37	Oct. 4	101.03	July 17	100.22
Jan. 6, 1931	103.50	Nov. 1	101.27	Aug. 21	99.38
Feb. 3	103.47	Dec. 6	101.58	Sept. 21	99.11
Mar. 3	103.82	Jan. 3, 1933	101.78	Nov. 3	99.35
Apr. 7	104.82	Feb. 7	101.94	Dec. 22	99.91
May 5	104.53	Mar. 7	102.10	Feb. 19, 1935	100.38
June 2	103.98	Apr. 4	102.28	Apr. 15	100.70
July 6	102.84	May 2	103.24	June 1	101.67
Aug. 3	102.12	June 6	103.51	July 1	102.19
Sept. 7	101.04	July 4	102.03	Aug. 16	100.76
Oct. 5	100.65	Aug. 1	101.25	Sept. 17	100.97
Nov. 3	100.72	Sept. 19	100.75	Oct. 24	100.98
Dec. 2	100.02	Oct. 19	100.90	Nov. 27	101.11
Jan. 6, 1932	101.39	Nov. 17	101.19	Dec. 31	101.48
Feb. 2	101.53	Dec. 20	101.50	Jan. 10, 1936	101.52
Mar. 1	102.19	Jan. 20, 1934	101.73	Mar. 28	101.95
Apr. 5	102.35	Feb. 20	101.93	June 5	102.40
May 3	102.42	Mar. 20	102.10	July 22	100.98
June 7	102.26	Apr. 18	102.17	Sept. 16	99.61
July 5	102.35	May 17	101.55	Nov. 27	99.77
Aug. 2	101.78				

283. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 29.4 feet. Measuring point, top of pipe, 1.1 feet above land surface and 110.79 feet above datum. Water level Nov. 3, 1930, 7.25 feet below land surface.

Nov. 3, 1930	103.54	Nov. 3, 1931	100.75	Nov. 2, 1932	100.66
Dec. 1	103.58	Dec. 3	101.09	Dec. 6	100.65
Jan. 5, 1931	103.16	Jan. 7, 1932	101.23	Jan. 4, 1933	100.69
Feb. 2	103.11	Feb. 4	101.31	Feb. 1	100.72
Mar. 2	103.23	Mar. 3	101.79	Mar. 7	100.74
Apr. 6	104.06	Apr. 5	101.74	Apr. 5	100.72
May 4	103.94	May 5	101.66	May 3	101.23
June 1	103.46	June 2	102.61	June 6	101.37
July 6	102.70	July 5	101.78	July 5	100.56
Aug. 3	102.01	Aug. 2	101.61	Aug. 2	100.29
Sept. 7	100.97	Sept. 6	101.22	Sept. 20	100.24
Oct. 5	100.54	Oct. 5	100.88	Oct. 20	100.23

Dawson County--Continued

283. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 18, 1933	100.67	Sept. 21, 1934	97.14	Oct. 24, 1935	100.88
Dec. 20	100.77	Nov. 14	99.28	Nov. 27	101.34
Jan. 20, 1934	100.85	Dec. 24	99.96	Dec. 31	101.50
Feb. 21	100.84	Feb. 28, 1935	100.26	Jan. 20, 1936	101.52
Mar. 21	100.83	Apr. 22	100.53	Mar. 28	101.66
Apr. 19	100.78	June 12	102.74	June 5	101.85
Mar. 18	100.14	July 2	102.54	July 23	100.07
June 17	99.44	Aug. 17	100.70	Sept. 16	98.60
July 17	98.54	Sept. 17	101.18	Nov. 27	99.41
Aug. 21	97.42				

284. ---, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 34.1 feet. Measuring point, top of pipe, 0.5 foot below land surface and 109.88 feet above datum. Water level Sept. 16, 1930, 6.23 feet below measuring point.

Sept. 16, 1930	103.65	July 5, 1932	101.76	May 18, 1934	100.12
Oct. 12	104.11	Aug. 2	101.52	June 17	99.20
Nov. 3	103.82	Sept. 6	101.00	July 17	97.97
Dec. 1	103.73	Oct. 5	100.84	Aug. 21	97.03
Jan. 5, 1931	103.51	Nov. 2	100.64	Sept. 21	96.94
Feb. 2	103.30	Dec. 6	100.70	Nov. 14	99.14
Mar. 2	103.40	Jan. 4, 1933	100.84	Dec. 24	99.96
Apr. 2	103.82	Feb. 1	100.97	Feb. 28, 1935	100.23
May 4	104.05	Mar. 7	100.89	Apr. 22	100.85
June 1	103.54	Apr. 5	100.96	June 12	104.13
July 6	102.82	May 3	101.56	July 2	103.33
Aug. 3	101.75	June 6	101.55	Aug. 17	100.64
Sept. 7	100.61	July 5	100.37	Sept. 17	101.48
Oct. 5	100.51	Aug. 2	100.14	Oct. 24	101.38
Nov. 3	100.76	Sept. 20	100.43	Nov. 27	101.55
Dec. 3	101.07	Oct. 20	100.45	Dec. 31	101.69
Jan. 7, 1932	101.28	Nov. 18	100.90	Jan. 20, 1936	101.66
Feb. 4	101.23	Dec. 20	100.95	Mar. 28	101.84
Mar. 3	101.84	Jan. 20, 1934	101.00	July 23	100.15
Apr. 5	101.78	Feb. 21	101.03	Sept. 16	98.49
May 5	101.79	Mar. 21	101.03	Nov. 27	99.86
June 2	102.46	Apr. 19	100.94		

285. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 29.2 feet. Measuring point, top of pipe, 1.7 feet above land surface and 111.37 feet above datum. Water level Nov. 3, 1930, 7.45 feet below measuring point.

Nov. 3, 1930	103.92	Sept. 6, 1932	100.55	June 17, 1934	99.04
Dec. 1	103.72	Oct. 5	100.42	July 17	98.00
Jan. 5, 1931	103.52	Nov. 2	100.57	Aug. 21	96.88
Feb. 2	103.32	Dec. 6	100.69	Sept. 21	96.83
Mar. 2	103.36	Jan. 4, 1933	100.79	Nov. 14	98.96
Apr. 6	104.00	Feb. 1	100.82	Dec. 24	99.97
May 4	103.95	Mar. 7	100.84	Feb. 28, 1935	100.22
June 1	103.47	Apr. 5	100.99	Apr. 22	101.01
July 6	103.07	May 3	101.53	June 12	104.71
Aug. 3	102.00	June 6	101.60	July 2	103.65
Sept. 7	100.87	July 5	100.57	Aug. 17	100.74
Oct. 5	100.63	Aug. 2	100.25	Sept. 17	101.57
Nov. 3	100.80	Sept. 20	100.66	Oct. 24	101.62
Dec. 3	101.20	Oct. 20	100.82	Nov. 27	101.85
Jan. 7, 1932	101.26	Nov. 18	101.04	Dec. 31	101.87
Feb. 4	101.27	Dec. 20	101.03	Jan. 20, 1936	101.83
Mar. 3	101.68	Jan. 20, 1934	101.05	Mar. 28	101.90
Apr. 5	101.65	Feb. 21	101.02	June 5	102.70
May 5	101.76	Mar. 21	101.01	July 23	100.44
June 2	102.82	Apr. 19	100.96	Sept. 16	98.50
July 5	102.63	May 18	100.21	Nov. 27	100.20
Aug. 2	101.91				

Dawson County--Continued

286. ---, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 28.3 feet. Measuring point, top of pipe, 0.5 foot above land surface and 114.30 feet above datum. Water level Sept. 17, 1930, 10.72 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1930	103.58	July 5, 1932	101.07	May 18, 1934	99.67
Oct. 12	103.43	Aug. 2	100.78	June 17	98.64
Nov. 3	103.62	Sept. 6	100.44	July 17	97.67
Dec. 1	103.40	Oct. 5	100.17	Aug. 21	96.69
Jan. 5, 1931	103.27	Nov. 2	100.58	Sept. 21	96.53
Feb. 2	102.95	Dec. 6	100.54	Nov. 14	99.98
Mar. 2	103.00	Jan. 4, 1933	100.49	Dec. 24	100.01
Apr. 6	103.29	Feb. 1	100.43	Feb. 28, 1935	99.89
May 4	103.55	Mar. 7	100.41	Apr. 22	100.27
June 1	103.38	Apr. 5	100.39	June 12	103.29
July 6	102.84	May 3	100.87	July 2	103.02
Aug. 3	102.18	June 6	100.78	Aug. 17	100.76
Sept. 7	101.01	July 5	99.89	Sept. 17	101.24
Oct. 5	100.44	Aug. 2	100.00	Oct. 24	101.29
Nov. 3	100.69	Sept. 20	100.40	Nov. 27	101.74
Dec. 3	100.94	Oct. 20	100.50	Dec. 31	101.64
Jan. 7, 1932	100.89	Nov. 18	100.71	Jan. 20, 1936	101.52
Feb. 4	100.82	Dec. 20	100.60	Mar. 28	101.32
Mar. 3	101.17	Jan. 20, 1934	100.58	June 5	101.82
Apr. 5	101.05	Feb. 21	100.50	July 23	100.25
May 5	100.97	Mar. 21	100.44	Sept. 16	98.66
June 2	101.18	Apr. 19	100.36	Nov. 27	100.01

287. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 27.4 feet. Measuring point, top of pipe, 1.5 feet above land surface and 117.10 feet above datum. Water level Nov. 3, 1930, 13.78 feet below measuring point.

Nov. 3, 1930	103.32	May 5, 1932	100.69	Nov. 14, 1934	99.67
Dec. 1	103.13	June 2	100.94	Dec. 24	100.06
Jan. 5, 1931	102.99	July 5	100.98	Feb. 28, 1935	99.56
Feb. 2	102.80	Aug. 2	101.34	Apr. 22	100.20
Mar. 2	102.69	Sept. 6	100.73	June 12	102.69
Apr. 2	102.72	Oct. 5	100.40	July 2	102.53
May 4	103.18	Nov. 2	101.15	Aug. 17	100.69
June 1	103.35	Dec. 6	100.59	Sept. 17	101.32
July 6	102.93	Jan. 4, 1933	100.39	Oct. 24	101.87
Aug. 3	102.51	Feb. 1	100.24	Nov. 27	101.92
Sept. 7	101.37	Mar. 7	100.15	Dec. 31	101.36
Oct. 5	100.82	Apr. 5	100.07	Jan. 20, 1936	101.16
Nov. 3	101.10	May 3	100.61	Mar. 28	100.74
Dec. 3	101.02	June 6	100.60	June 5	101.60
Jan. 7, 1932	100.72	July 5	99.93	July 23	99.95
Feb. 4	100.57	Aug. 2	100.52	Sept. 16	98.42
Mar. 3	100.79	Sept. 20	100.83	Nov. 27	100.95
Apr. 5	100.63	Oct. 20	100.76		

288. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 24.2 feet. Measuring point, top of pipe, 1.4 feet above land surface and 116.21 feet above datum. Water level Nov. 3, 1930, 13.48 feet below measuring point.

Nov. 3, 1930	102.73	Nov. 3, 1931	100.76	Nov. 2, 1932	100.95
Dec. 1	102.65	Dec. 3	100.96	Dec. 6	100.23
Jan. 5, 1931	102.45	Jan. 7, 1932	100.25	Jan. 4, 1933	99.99
Feb. 2	102.24	Feb. 4	100.06	Feb. 1	99.83
Mar. 2	102.19	Mar. 3	100.36	Mar. 7	99.71
Apr. 6	102.48	Apr. 5	100.14	Apr. 5	99.63
May 4	102.77	May 5	99.91	May 3	100.48
June 1	102.91	June 2	100.46	June 6	100.74
July 6	102.43	July 5	100.99	July 5	100.34
Aug. 3	101.81	Aug. 2	101.40	Aug. 2	100.51
Sept. 7	101.07	Sept. 6	100.85	Sept. 20	100.76
Oct. 5	100.74	Oct. 5	101.34	Oct. 20	100.10

Dawson County--Continued

288. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 18, 1933	100.24	Sept. 21, 1934	96.73	Oct. 24, 1935	101.97
Dec. 20	99.91	Nov. 14	101.13	Nov. 27	101.58
Jan. 20, 1934	99.77	Dec. 24	100.09	Dec. 31	100.98
Feb. 21	99.67	Feb. 28, 1935	99.33	Jan. 20, 1936	100.78
Mar. 21	99.61	Apr. 22	100.75	Mar. 28	100.34
Apr. 19	99.53	June 12	102.33	June 5	101.53
May 18	99.39	July 2	102.16	July 23	99.65
June 17	98.47	Aug. 17	100.47	Sept. 16	98.13
July 17	97.81	Sept. 17	101.45	Nov. 27	101.09
Aug. 21	96.45				

289. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 15.6 feet. Measuring point, top of pipe, 1.2 feet above land surface and 108.86 feet above datum. Water level Nov. 3, 1930, 6.02 feet below measuring point.

Nov. 3, 1930	102.84	Sept. 6, 1932	100.43	June 17, 1934	98.47
Dec. 1	102.96	Oct. 5	100.51	July 17	97.61
Jan. 5, 1931	102.56	Nov. 2	100.45	Aug. 21	96.03
Feb. 2	102.33	Dec. 6	100.28	Sept. 21	96.02
Mar. 2	102.55	Jan. 4, 1933	100.15	Nov. 14	99.53
Apr. 6	103.28	Feb. 1	100.06	Dec. 24	100.06
May 4	102.96	Mar. 7	100.01	Feb. 28, 1935	99.56
June 1	102.56	Apr. 5	99.99	Apr. 22	100.64
July 6	102.23	May 3	100.89	June 12	103.38
Aug. 3	101.25	June 6	100.86	July 2	102.44
Sept. 7	100.38	July 5	99.92	Aug. 17	99.08
Oct. 5	99.89	Aug. 2	99.87	Sept. 17	101.29
Nov. 3	100.20	Sept. 20	100.60	Oct. 24	100.92
Dec. 3	100.38	Oct. 20	100.68	Nov. 27	101.26
Jan. 7, 1932	100.24	Nov. 18	100.39	Dec. 31	100.97
Feb. 4	100.15	Dec. 20	100.18	Jan. 20, 1936	100.83
Mar. 3	100.69	Jan. 20, 1934	100.09	Mar. 28	100.60
Apr. 5	100.48	Feb. 21	99.99	June 5	101.60
May 5	100.19	Mar. 21	99.97	July 23	99.60
June 2	101.31	Apr. 19	99.86	Sept. 16	97.88
July 5	100.85	May 18	99.23	Nov. 27	100.20
Aug. 2	100.92				

290. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 15.4 feet. Measuring point, top of pipe, 0.6 foot above land surface and 109.07 feet above datum. Water level Nov. 3, 1930, 6.18 feet below measuring point.

Nov. 3, 1930	102.89	Sept. 6, 1932	101.99	June 17, 1934	99.47
Dec. 1	103.03	Oct. 4	101.18	July 17	97.94
Jan. 5, 1931	102.44	Nov. 2	100.49	Aug. 21	96.12
Feb. 2	102.22	Dec. 6	100.54	Sept. 21	96.73
Mar. 2	102.52	Jan. 4, 1933	100.28	Nov. 14	102.13
Apr. 6	103.51	Feb. 1	100.23	Dec. 24	100.05
May 4	103.73	Mar. 7	100.24	Feb. 28, 1935	99.63
June 1	103.15	Apr. 5	100.27	Apr. 22	103.88
July 6	102.53	May 3	102.60	June 12	104.43
Aug. 3	101.06	June 6	102.70	July 2	102.90
Sept. 7	100.66	July 5	101.89	Aug. 17	99.77
Oct. 5	100.27	Aug. 2	100.36	Sept. 17	101.45
Nov. 3	100.31	Sept. 20	101.33	Oct. 24	101.31
Dec. 3	100.22	Oct. 20	101.16	Nov. 27	100.93
Jan. 7, 1932	100.17	Nov. 18	100.48	Dec. 31	100.81
Feb. 4	100.20	Dec. 20	100.31	Jan. 20, 1936	100.71
Mar. 3	100.90	Jan. 20, 1934	100.24	Mar. 28	100.63
Apr. 5	100.64	Feb. 21	100.18	June 5	102.27
May 5	100.53	Mar. 21	100.20	July 23	99.84
June 2	103.57	Apr. 19	100.18	Sept. 16	97.64
July 5	101.68	May 18	101.25	Nov. 27	100.48
Aug. 2	103.10				

Dawson County--Continued

291. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 11.4 feet. Measuring point, top of pipe, 1.3 feet above land surface and 107.17 feet above datum. Water level Nov. 3, 1930, 4.33 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 3, 1930	102.84	Sept. 6, 1932	101.14	June 17, 1934	99.35
Dec. 1	102.91	Oct. 5	101.06	July 17	98.47
Jan. 5, 1931	102.31	Nov. 2	100.67	Aug. 21	96.89
Feb. 2	102.07	Dec. 6	100.53	Sept. 21	96.95
Mar. 2	102.41	Jan. 4, 1933	100.52	Nov. 14	100.01
Apr. 6	103.56	Feb. 1	100.65	Dec. 24	100.03
May 4	102.89	Mar. 7	100.52	Feb. 28, 1935	99.80
June 1	102.45	Apr. 5	100.60	Apr. 22	101.88
July 6	102.11	May 3	101.83	June 12	104.20
Aug. 3	100.68	June 6	101.82	July 2	102.89
Sept. 7	99.75	July 5	100.77	Aug. 17	99.49
Oct. 5	100.07	Aug. 2	100.03	Sept. 17	101.20
Nov. 3	100.31	Sept. 20	101.02	Oct. 24	100.97
Dec. 3	100.31	Oct. 20	101.01	Nov. 27	100.95
Jan. 7, 1932	100.27	Nov. 18	100.65	Dec. 31	100.85
Feb. 4	100.27	Dec. 20	100.50	Jan. 20, 1936	100.87
Mar. 3	101.12	Jan. 20, 1934	100.44	Mar. 28	100.78
Apr. 5	100.84	Feb. 21	100.48	June 5	101.87
May 5	101.00	Mar. 21	100.60	July 23	99.17
June 2	103.01	Apr. 19	100.41	Sept. 16	97.50
July 5	101.52	May 18	100.22	Nov. 27	99.50
Aug. 2	101.94				

292. ---, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 10 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 13.7 feet. Measuring point, top of pipe, 0.6 foot above land surface and 107.77 feet above datum. Water level Sept. 17, 1930, 5.08 feet below measuring point.

Sept. 17, 1930	102.69	Aug. 2, 1932	101.82	June 17, 1934	99.72
Nov. 3	102.43	Sept. 6	101.66	July 17	99.01
Dec. 1	102.47	Oct. 5	101.25	Aug. 21	98.05
Jan. 5, 1931	102.02	Nov. 2	100.92	Sept. 21	97.90
Feb. 2	101.82	Dec. 6	100.84	Nov. 14	99.68
Mar. 2	102.00	Jan. 4, 1933	100.84	Dec. 24	99.98
Apr. 6	103.03	Feb. 1	100.84	Feb. 28, 1935	100.14
May 4	102.47	Mar. 7	100.89	Apr. 22	101.50
June 1	102.14	Apr. 5	100.94	June 12	103.88
July 6	102.11	May 3	101.79	July 16	101.74
Aug. 3	100.66	June 6	102.21	Aug. 17	99.60
Sept. 7	99.82	July 5	100.94	Sept. 17	101.25
Oct. 5	100.65	Aug. 2	100.37	Oct. 24	101.04
Nov. 3	100.49	Sept. 20	100.95	Nov. 27	100.99
Dec. 3	100.50	Oct. 20	101.08	Dec. 31	101.02
Jan. 7, 1932	100.55	Nov. 18	100.81	Jan. 20, 1936	100.98
Feb. 4	100.58	Dec. 20	100.78	Mar. 28	101.03
Mar. 3	101.23	Jan. 20, 1934	100.80	June 5	101.74
Apr. 5	101.14	Feb. 21	100.81	July 23	99.66
May 5	100.90	Mar. 21	100.86	Sept. 16	98.02
June 2	103.02	Apr. 19	100.77	Nov. 27	99.11
July 5	101.72	May 18	100.95		

293. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 6, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 11.3 feet. Measuring point, top of pipe, 1.0 foot above land surface and 106.89 feet above datum. Water level Nov. 3, 1930, 5.97 feet below measuring point.

Nov. 3, 1930	100.92	Dec. 3, 1931	100.42	Aug. 2, 1932	100.65
Dec. 1	101.15	Jan. 7, 1932	100.56	Sept. 6	99.98
Jan. 5, 1931	100.69	Feb. 4	100.63	Oct. 4	100.37
Feb. 2	100.65	Mar. 3	101.20	Nov. 1	100.61
Mar. 2	100.88	Apr. 5	101.05	Dec. 6	100.71
Apr. 6	101.72	May 5	100.98	Jan. 4, 1933	100.78
Oct. 12	99.66	June 2	102.82	Feb. 1	100.89
Nov. 3	100.04	July 5	100.94	Mar. 7	100.92

Dawson County--Continued

293. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 5, 1933	100.88	Apr. 19, 1934	100.75	Aug. 17, 1935	99.20
May 3	100.64	May 18	100.17	Sept. 17	101.48
June 6	101.17	June 17	99.36	Oct. 24	101.71
July 5	100.02	July 17	98.60	Nov. 27	101.00
Aug. 2	99.62	Aug. 21	97.97	Dec. 31	100.94
Sept. 20	100.36	Sept. 21	98.13	Jan. 20, 1936	100.93
Oct. 20	100.49	Nov. 14	99.04	Mar. 28	100.97
Nov. 18	100.64	Dec. 24	99.96	June 5	101.69
Dec. 20	100.78	Feb. 28, 1935	100.31	July 23	98.88
Jan. 20, 1934	100.81	Apr. 22	100.75	Sept. 16	98.11
Feb. 21	100.85	June 12	102.10	Nov. 27	98.18
Mar. 21	100.87	July 16	100.84		

294. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 11.7 feet. Measuring point, top of pipe, 1.0 foot above land surface and 106.08 feet above datum. Water level Nov. 3, 1930, 5.19 feet below measuring point.

Nov. 3, 1930	100.89	Sept. 6, 1932	99.46	June 17, 1935	98.33
Dec. 1	101.25	Oct. 4	99.96	July 16	97.80
Jan. 5, 1931	100.84	Nov. 1	100.22	Aug. 21	97.63
Feb. 2	100.76	Dec. 6	100.36	Sept. 21	98.04
Mar. 2	101.08	Jan. 4, 1933	100.53	Nov. 14	98.99
Apr. 6	102.08	Feb. 1	100.59	Dec. 24	99.96
May 4	101.38	Mar. 1	100.63	Feb. 28, 1935	100.26
June 1	100.51	Apr. 5	100.55	Apr. 22	100.25
July 6	100.04	May 3	101.32	June 12	101.92
Aug. 3	98.77	June 6	100.30	July 16	100.87
Sept. 7	98.58	July 5	98.85	Aug. 17	98.60
Oct. 5	99.03	Aug. 2	98.74	Sept. 17	100.52
Nov. 3	99.61	Sept. 20	99.91	Oct. 24	100.69
Dec. 2	100.24	Oct. 20	100.16	Nov. 27	100.56
Jan. 6, 1932	100.41	Nov. 18	100.28	Dec. 31	100.52
Feb. 4	100.40	Dec. 20	100.38	Jan. 20, 1936	100.55
Mar. 2	100.79	Jan. 20, 1934	100.46	Mar. 28	100.32
Apr. 5	100.58	Feb. 21	100.50	June 6	101.51
May 4	100.39	Mar. 21	100.49	July 23	98.64
June 1	101.65	Apr. 19	100.05	Sept. 16	98.35
July 5	100.45	May 18	99.24	Nov. 27	99.42
Aug. 2	100.56				

295. ---, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 15.7 feet. Measuring point, top of pipe, 0.9 foot above land surface and 108.35 feet above datum. Water level Nov. 3, 1930, 8.07 feet below measuring point.

Nov. 3, 1930	100.28	Sept. 6, 1932	99.92	June 17, 1934	99.33
Dec. 1	100.53	Oct. 4	100.00	July 16	99.05
Jan. 5, 1931	100.33	Nov. 1	99.99	Aug. 21	98.46
Feb. 2	100.26	Dec. 6	100.07	Sept. 21	98.73
Mar. 2	100.46	Jan. 4, 1933	100.15	Nov. 14	99.76
Apr. 6	101.45	Feb. 1	100.22	Dec. 24	99.95
May 4	101.17	Mar. 1	100.27	Feb. 28, 1935	100.34
June 1	100.43	Apr. 5	100.26	Apr. 22	100.32
July 6	99.87	May 3	100.83	June 12	101.47
Aug. 3	99.31	June 6	100.92	July 16	99.92
Sept. 7	99.27	July 5	99.90	Aug. 17	98.77
Oct. 5	99.42	Aug. 2	99.43	Sept. 17	100.29
Nov. 4	99.58	Sept. 20	99.92	Oct. 24	100.70
Dec. 2	100.07	Oct. 20	100.06	Nov. 27	100.22
Jan. 6, 1932	100.13	Nov. 18	100.09	Dec. 31	100.26
Feb. 4	100.13	Dec. 20	100.26	Jan. 20, 1936	100.32
Mar. 2	100.48	Jan. 20, 1934	100.31	Mar. 28	100.24
Apr. 5	100.24	Feb. 21	100.30	June 6	101.09
May 4	100.31	Mar. 21	100.37	July 23	98.81
June 1	101.20	Apr. 19	100.25	Sept. 16	98.52
July 5	100.44	May 18	100.29	Nov. 27	99.69
Aug. 2	100.78				

Dawson County--Continued

296. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 9 N., R. 21 W.
Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.7 feet. Measuring point, top
of pipe, 1.1 feet above land surface and 107.05 feet above datum. Water
level Nov. 3, 1930, 6.90 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 3, 1930	100.15	Aug. 2, 1932	101.01	May 18, 1934	99.97
Dec. 1	100.28	Sept. 6	99.99	June 17	99.92
Jan. 5, 1931	100.20	Oct. 4	100.17	July 16	99.43
Feb. 2	100.17	Nov. 1	99.92	Aug. 21	98.91
Mar. 2	100.29	Dec. 6	99.99	Sept. 21	99.11
Apr. 6	101.13	Jan. 4, 1933	100.04	Nov. 14	100.09
May 4	100.53	Feb. 1	100.12	Dec. 24	99.96
June 1	100.31	Mar. 1	100.19	Feb. 28, 1935	100.34
July 6	100.09	Apr. 5	100.21	Apr. 22	100.38
Aug. 3	99.65	May 3	100.69	June 12	101.05
Sept. 7	99.48	June 6	100.52	July 16	100.21
Oct. 5	99.87	July 5	100.01	Aug. 17	99.55
Nov. 4	99.83	Aug. 2	99.65	Sept. 17	100.21
Dec. 2	99.95	Sept. 20	100.18	Oct. 24	100.17
Jan. 6, 1932	100.03	Oct. 20	100.16	Nov. 27	100.07
Feb. 4	100.08	Nov. 18	100.41	Dec. 31	100.14
Mar. 2	100.26	Dec. 20	100.21	Jan. 20, 1936	100.26
Apr. 5	100.14	Jan. 20, 1934	100.25	Mar. 28	100.21
May 4	100.12	Feb. 21	100.27	July 23	99.50
June 1	100.89	Mar. 21	100.34	Sept. 16	98.99
July 5	100.42	Apr. 19	100.35	Nov. 27	100.04

297. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 9 N., R. 21 W.
Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.7 feet. Measuring point, top
of pipe, 0.9 foot above land surface and 106.55 feet above datum. Water
level Nov. 3, 1930, 5.57 feet below measuring point.

Nov. 3, 1930	100.98	Sept. 6, 1932	100.97	June 17, 1934	99.92
Dec. 1	101.28	Oct. 4	100.78	July 16	99.58
Jan. 5, 1931	101.04	Nov. 1	100.61	Aug. 14	98.41
Feb. 2	101.03	Dec. 6	100.65	Sept. 21	99.31
Mar. 2	101.22	Jan. 4, 1933	100.75	Nov. 14	100.41
Apr. 6	102.30	Feb. 1	100.86	Dec. 24	99.93
May 4	101.73	Mar. 1	100.95	Feb. 28, 1935	100.47
June 1	101.36	Apr. 5	100.97	Apr. 22	101.34
July 6	100.94	May 3	101.93	June 12	102.53
Aug. 3	100.20	June 6	101.49	July 16	101.09
Sept. 7	99.87	July 5	100.77	Aug. 17	99.90
Oct. 5	100.10	Aug. 2	100.25	Sept. 17	101.01
Nov. 4	100.20	Sept. 20	100.53	Oct. 24	100.58
Dec. 2	100.35	Oct. 20	100.75	Nov. 27	100.58
Jan. 6, 1932	100.53	Nov. 18	100.60	Dec. 31	100.61
Feb. 4	100.68	Dec. 20	100.70	Jan. 20, 1936	100.67
Mar. 2	101.12	Jan. 20, 1934	100.80	Mar. 28	100.86
Apr. 5	101.00	Feb. 21	100.88	June 5	100.56
May 4	100.85	Mar. 21	100.88	July 23	99.92
June 1	101.61	Apr. 19	100.85	Sept. 16	99.11
July 5	101.43	May 18	100.40	Nov. 27	100.02
Aug. 2	102.10				

298. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 9 N., R. 21 W.
Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.5 feet. Measuring point, top
of pipe, 1.0 foot above land surface and 106.82 feet above datum. Water
level Nov. 3, 1930, 5.33 feet below measuring point.

Nov. 3, 1930	101.49	Sept. 7, 1931	100.12	July 5, 1932	101.55
Dec. 1	101.78	Oct. 5	99.89	Aug. 2	102.04
Jan. 5, 1931	101.52	Nov. 4	100.29	Sept. 6	101.01
Feb. 2	101.61	Dec. 2	100.67	Oct. 4	100.85
Mar. 2	101.73	Jan. 6, 1932	100.99	Nov. 1	101.03
Apr. 6	102.70	Feb. 4	101.21	Dec. 6	101.15
May 4	102.00	Mar. 2	101.66	Jan. 4, 1933	101.29
June 1	101.54	Apr. 5	101.47	Feb. 1	101.38
July 6	101.04	May 4	101.37	Mar. 1	101.48
Aug. 3	100.57	June 1	101.95	Apr. 5	101.42

Dawson County--Continued

298. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 3, 1933	102.27	Apr. 19, 1934	101.21	July 16, 1935	101.31
June 6	101.81	May 18	100.88	Aug. 17	100.33
July 5	100.94	June 17	100.39	Sept. 17	101.23
Aug. 2	100.52	July 16	99.99	Oct. 24	100.68
Sept. 20	100.68	Aug. 21	99.49	Nov. 27	100.92
Oct. 20	100.99	Sept. 21	99.34	Dec. 31	100.99
Nov. 18	101.04	Nov. 14	99.40	Jan. 20, 1936	101.03
Dec. 20	101.15	Dec. 24	99.90	Mar. 28	101.23
Jan. 20, 1934	101.27	Feb. 28, 1935	100.75	June 5	101.42
Feb. 21	101.28	Apr. 22	100.96	July 23	100.21
Mar. 21	101.31	June 12	102.59	Sept. 16	99.42
				Nov. 27	99.78

299. ---, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 9 N., R. 21 W. Driven well, diameter $1\frac{1}{2}$ inches, depth 11.2 feet. Measuring point, top of pipe, 0.3 foot above land surface and 104.06 feet above datum. Water level Sept. 18, 1930, 3.40 feet below measuring point.

Sept. 18, 1930	100.66	July 5 1932	100.36	Apr. 21, 1934	100.65
Nov. 3	100.98	Aug. 2	100.76	May 18	100.01
Dec. 1	101.17	Sept. 6	99.75	June 17	99.26
Jan. 5, 1931	100.93	Oct. 4	100.42	July 16	98.81
Feb. 2	101.26	Nov. 1	100.74	Aug. 21	98.48
Mar. 2	101.07	Dec. 6	100.81	Sept. 21	98.50
Apr. 6	101.73	Jan. 4, 1933	100.98	Nov. 14	98.21
May 4	101.06	Feb. 1	100.86	Dec. 24	99.92
June 1	100.35	Mar. 1	101.11	Feb. 28, 1935	100.55
July 6	99.87	Apr. 5	100.75	Apr. 22	100.10
Aug. 3	99.13	May 3	101.20	June 12	101.05
Sept. 7	98.81	June 6	100.66	July 16	100.11
Oct. 5	98.61	July 5	99.51	Aug. 17	98.89
Nov. 4	100.13	Aug. 2	99.18	Sept. 17	100.14
Dec. 2	100.66	Sept. 20	100.46	Oct. 24	100.23
Jan. 6, 1932	100.70	Oct. 20	100.62	Nov. 27	100.59
Feb. 4	101.24	Nov. 18	100.72	Dec. 31	100.69
Mar. 2	101.20	Dec. 20	100.91	Jan. 20, 1936	100.64
Apr. 5	100.82	Jan. 20, 1934	101.01	Mar. 28	100.53
May 4	100.76	Feb. 21	100.82	June 5	100.42
June 1	101.15	Mar. 21	100.79	Nov. 27	99.63

300. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 9 N., R. 21 W., in bed of Platte River near north bank. Driven well, diameter $1\frac{1}{2}$ inches, depth 12.2 feet. Measuring point, top of pipe, 2.6 feet above stream bed and 102.99 feet above datum. Water level Nov. 3, 1930, 2.37 feet below measuring point.

Nov. 3, 1930	100.62	Sept. 6, 1932	99.48	June 17, 1934	98.61
Dec. 1	100.64	Oct. 4	100.19	July 16	98.27
Jan. 5, 1931	100.60	Nov. 1	100.49	Aug. 21	98.04
Feb. 2	100.90	Dec. 6	100.52	Sept. 21	98.08
Mar. 2	100.69	Jan. 4, 1933	100.63	Nov. 14	97.76
Apr. 6	101.06	Feb. 1	100.49	Dec. 24	99.96
May 4	100.63	Mar. 1	100.73	Feb. 28, 1935	100.29
June 1	99.94	Apr. 5	100.31	Apr. 22	99.71
July 6	99.50	May 3	100.56	June 12	100.55
Aug. 3	98.67	June 6	100.28	July 16	99.81
Sept. 7	98.37	July 5	98.97	Aug. 17	98.59
Oct. 5	98.19	Aug. 2	98.67	Sept. 17	99.70
Nov. 4	100.12	Sept. 20	100.27	Oct. 24	100.10
Dec. 2	100.77	Oct. 20	100.37	Nov. 27	100.58
Jan. 6, 1932	100.35	Nov. 18	100.44	Dec. 31	100.44
Feb. 4	100.95	Dec. 20	100.70	Jan. 20, 1936	100.22
Mar. 2	100.74	Jan. 20, 1934	100.76	Mar. 28	100.19
Apr. 5	100.55	Feb. 21	100.44	June 5	100.32
May 4	100.40	Mar. 21	100.40	July 23	98.32
June 1	100.56	Apr. 19	100.31	Sept. 16	97.88
July 5	100.10	May 18	99.50	Nov. 27	99.61
Aug. 2	100.21				

Dawson County--Continued

301. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 9 N., R. 21 W., in bed of Platte River near south bank. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.2 feet. Measuring point, top of pipe, 1.4 feet above stream bed and 103.57 feet above datum. Water level Nov. 3, 1930, 3.45 below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 3, 1930	100.12	July 5, 1932	99.41	Apr. 19, 1934	99.64
Dec. 1	100.50	Aug. 2	99.46	May 18	98.22
Jan. 5, 1931	100.40	Sept. 6	99.03	June 7	97.54
Feb. 2	100.33	Oct. 4	99.58	July 16	96.85
Mar. 2	100.15	Nov. 1	99.71	Dec. 24	100.07
Apr. 6	100.64	Dec. 6	99.72	Feb. 28, 1935	99.64
May 4	99.98	Jan. 4, 1933	99.92	Apr. 22	98.63
June 1	98.81	Feb. 1	99.93	June 12	100.29
July 6	98.35	Mar. 1	100.49	July 16	98.43
Aug. 3	97.25	Apr. 5	100.00	Aug. 17	96.82
Sept. 7	96.72	May 3	100.15	Sept. 17	98.42
Oct. 5	96.62	June 6	99.84	Oct. 24	99.03
Nov. 4	99.59	July 5	97.62	Nov. 27	99.67
Dec. 2	99.88	Aug. 2	97.29	Dec. 31	99.44
Jan. 6, 1932	99.47	Sept. 20	99.83	Jan. 20, 1936	100.00
Feb. 4	100.21	Nov. 18	99.82	Mar. 28	98.98
Mar. 2	100.13	Dec. 20	100.47	June 6	99.05
Apr. 5	99.50	Jan. 20, 1934	100.72	July 23	96.78
May 4	99.87	Feb. 21	100.17	Sept. 16	96.21
June 1	99.44	Mar. 21	100.21	Nov. 27	98.95

302. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.5 feet. Measuring point, top of pipe, 2.2 feet above land surface and 106.30 feet above datum. Water level Nov. 3, 1930, 6.14 feet below measuring point.

Nov. 3, 1930	100.16	Sept. 6, 1932	98.51	June 17, 1934	97.70
Dec. 1	100.37	Oct. 4	99.47	July 16	97.08
Jan. 5, 1931	100.25	Nov. 1	99.80	Aug. 21	96.72
Feb. 2	100.47	Dec. 6	99.90	Sept. 21	96.87
Mar. 2	100.33	Jan. 4, 1933	100.49	Nov. 14	96.48
Apr. 6	100.78	Feb. 1	100.09	Dec. 24	100.01
May 4	100.27	Mar. 1	100.55	Feb. 28, 1935	99.93
June 1	99.03	Apr. 5	100.05	Apr. 22	98.91
July 6	98.55	May 3	100.94	June 12	100.45
Aug. 3	97.46	June 6	99.82	July 16	98.59
Sept. 7	97.06	July 5	97.85	Aug. 17	97.04
Oct. 5	96.86	Aug. 2	97.47	Sept. 17	98.68
Nov. 4	99.52	Sept. 20	99.84	Oct. 24	99.14
Dec. 2	99.90	Oct. 20	99.73	Nov. 27	99.81
Jan. 6, 1932	99.68	Nov. 18	99.97	Dec. 31	99.53
Feb. 4	100.40	Dec. 20	100.45	Jan. 20, 1936	100.12
Mar. 2	100.52	Jan. 20, 1934	100.50	Mar. 28	99.33
Apr. 5	99.83	Feb. 21	99.99	June 6	99.33
May 4	99.90	Mar. 21	99.98	July 23	97.05
June 1	99.78	Apr. 19	99.77	Sept. 16	96.49
July 5	99.26	May 18	98.60	Nov. 27	99.03
Aug. 2	99.72				

303. ---, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 9.8 feet. Measuring point, top of pipe, 0.5 foot above land surface and 102.95 feet above datum. Water level Nov. 3, 1930, 2.22 feet below measuring point.

Nov. 3, 1930	100.73	Sept. 7, 1931	97.86	July 5, 1932	99.42
Dec. 1	100.77	Oct. 5	97.75	Aug. 2	100.86
Jan. 5, 1931	100.84	Nov. 4	99.56	Sept. 6	98.81
Feb. 2	101.09	Dec. 2	100.08	Oct. 4	99.45
Mar. 2	101.06	Jan. 6, 1932	100.13	Nov. 1	100.12
Apr. 6	101.70	Feb. 4	100.71	Dec. 6	100.32
May 4	100.76	Mar. 2	101.34	Jan. 4, 1933	100.71
June 1	99.61	Apr. 5	100.32	Feb. 1	100.63
July 6	99.22	May 4	100.29	Mar. 1	101.03
Aug. 3	98.24	June 1	100.28	Apr. 5	100.60

Dawson County--Continued

303. ---Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 3, 1933	102.35	May 18, 1934	99.35	Aug. 17, 1935	97.80
June 6	100.24	June 17	98.43	Sept. 17	99.47
July 5	98.59	July 16	97.79	Oct. 24	99.70
Aug. 2	98.20	Aug. 21	97.49	Nov. 27	100.30
Sept. 20	100.17	Sept. 21	97.58	Dec. 31	99.93
Oct. 20	100.21	Nov. 14	97.48	Jan. 20, 1936	100.54
Nov. 18	100.48	Dec. 24	99.94	Mar. 28	100.12
Dec. 20	100.79	Feb. 28, 1935	100.40	June 6	99.95
Jan. 20, 1934	101.15	Apr. 22	99.64	July 23	97.73
Feb. 21	100.74	June 12	101.02	Sept. 16	97.26
Mar. 21	100.52	July 16	99.09	Nov. 27	99.19
Apr. 19	100.27				

304. University of Nebraska, NE $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 30, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.7 feet. Measuring point, top of pipe, 0.9 foot above land surface and 107.43 feet above datum. Water level Nov. 3, 1930, 6.43 feet below measuring point.

Nov. 3, 1930	101.00	Aug. 2, 1932	100.48	June 17, 1934	98.75
Dec. 1	100.76	Sept. 6	99.21	July 16	98.23
Jan. 5, 1931	101.00	Oct. 4	99.42	Aug. 21	97.79
Feb. 2	101.02	Nov. 1	100.16	Sept. 21	97.87
Mar. 2	100.73	Dec. 6	100.42	Nov. 14	97.94
Apr. 6	101.17	Jan. 4, 1933	100.82	Dec. 24	99.95
May 4	100.56	Feb. 1	100.50	Feb. 28, 1935	100.34
June 1	99.95	Mar. 1	101.01	Apr. 22	99.71
July 6	99.64	Apr. 5	100.54	June 12	101.13
Aug. 3	98.89	May 3	100.86	July 16	98.75
Sept. 7	98.47	June 6	100.76	Aug. 17	98.37
Oct. 5	98.29	July 5	99.23	Sept. 17	99.86
Nov. 4	99.74	Aug. 2	98.64	Oct. 24	100.06
Dec. 2	100.03	Sept. 20	100.53	Nov. 27	100.53
Jan. 6, 1932	100.20	Nov. 18	100.69	Dec. 31	99.92
Feb. 4	100.85	Dec. 20	100.96	Jan. 20, 1936	100.80
Mar. 2	100.93	Jan. 20, 1934	101.17	Mar. 28	100.03
Apr. 5	100.31	Feb. 20	100.88	June 6	100.07
May 4	100.28	Mar. 21	100.50	July 23	98.29
June 1	100.08	Apr. 19	100.43	Sept. 16	97.77
July 5	99.72	May 18	99.60	Nov. 27	99.45

305. University of Nebraska, NE $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 31, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 20.8 feet. Measuring point, top of pipe, 0.4 foot above land surface and 117.92 feet above datum. Water level Nov. 3, 1930, 15.97 feet below measuring point.

Nov. 3, 1930	101.95	Sept. 6, 1932	100.67	June 17, 1934	100.06
Dec. 1	101.85	Oct. 4	100.52	July 16	99.69
Jan. 5, 1931	102.09	Nov. 1	101.01	Aug. 21	99.23
Feb. 2	102.07	Dec. 6	101.29	Sept. 21	99.30
Mar. 2	102.02	Jan. 3, 1933	101.65	Nov. 14	99.32
Apr. 6	102.41	Feb. 1	101.63	Dec. 24	99.88
May 4	102.07	Mar. 1	101.78	Feb. 28, 1935	100.87
June 1	101.57	Apr. 5	101.64	Apr. 22	100.70
July 6	101.15	May 3	101.91	June 12	102.02
Aug. 3	100.56	June 6	101.87	July 16	101.06
Sept. 7	100.16	July 5	100.62	Aug. 17	99.73
Oct. 5	99.95	Aug. 2	100.13	Sept. 17	100.95
Nov. 4	100.28	Sept. 20	100.94	Oct. 24	100.90
Dec. 2	100.89	Oct. 20	101.03	Nov. 27	101.22
Jan. 6, 1932	101.18	Nov. 18	101.29	Dec. 31	101.13
Feb. 4	101.59	Dec. 20	101.48	Jan. 20, 1936	101.38
Mar. 2	101.91	Jan. 20, 1934	101.79	Mar. 28	101.32
Apr. 5	101.56	Feb. 21	101.59	June 6	101.18
May 4	101.42	Mar. 21	101.52	July 23	99.75
June 1	101.12	Apr. 19	101.41	Sept. 16	99.30
July 5	100.83	May 18	100.58	Nov. 27	99.73
Aug. 2	101.66				

Dawson County--Continued

306. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 9 N., R. 21 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 24.6 feet. Measuring point, top of pipe, 1.5 feet above land surface and 118.11 feet above datum. Water level Nov. 3, 1930, 16.81 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 3, 1930	101.30	Nov. 1, 1932	101.07	July 16, 1934	100.38
Dec. 1	101.39	Dec. 6	101.20	Aug. 21	100.06
Jan. 5, 1931	101.48	Jan. 3, 1933	101.33	Sept. 21	99.92
Feb. 2	101.45	Feb. 1	101.43	Nov. 14	99.81
Mar. 2	101.48	Mar. 1	101.52	Dec. 24	99.93
Apr. 6	101.61	Apr. 5	101.57	Feb. 28, 1935	100.46
May 4	101.74	May 3	101.70	Apr. 22	100.62
June 1	101.56	June 6	101.90	June 12	101.31
July 6	101.33	July 5	101.34	July 16	101.15
Nov. 4	100.66	Aug. 2	100.94	Aug. 17	100.63
Dec. 2	100.85	Sept. 20	100.83	Sept. 17	101.03
Jan. 6, 1932	101.07	Oct. 20	100.93	Oct. 24	100.91
Feb. 4	101.24	Nov. 18	101.01	Nov. 27	101.05
Mar. 2	101.52	Dec. 20	101.14	Dec. 31	101.09
Apr. 5	101.56	Jan. 20, 1934	101.31	Jan. 20, 1936	101.12
May 4	101.49	Feb. 21	101.40	Mar. 28	101.32
June 1	101.20	Mar. 21	101.41	June 6	101.30
July 5	101.17	Apr. 19	101.38	July 23	100.55
Aug. 2	101.51	May 18	100.96	Sept. 16	99.99
Sept. 6	101.32	June 17	100.62	Nov. 27	99.89
Oct. 4	101.06				

308. E. Fleming, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 9, T. 10 N., R. 23 W. Drilled irrigation well, diameter 24 inches, depth 35 feet. Measuring point, top of concrete curb, flush with land surface and 115.54 feet above datum. Water level Nov. 3, 1930, 10.30 feet below measuring point.

Nov. 3, 1930	105.24	Sept. 6, 1932	101.12	June 17, 1934	99.88
Dec. 1	105.38	Oct. 5	100.71	July 16	a/ 87.51
Jan. 5, 1931	104.64	Nov. 2	100.93	Aug. 21	97.56
Feb. 2	104.22	Dec. 6	100.56	Sept. 22	98.07
Mar. 2	104.38	Jan. 4, 1933	100.39	Nov. 15	99.17
Apr. 6	105.30	Feb. 1	100.28	Dec. 27	100.00
May 4	104.74	Mar. 1	100.25	Mar. 1, 1935	99.98
June 1	104.19	Apr. 5	100.31	Apr. 24	100.65
July 6	103.67	May 3	100.90	June 13	102.69
Aug. 3	102.13	June 6	101.22	July 2	102.82
Sept. 7	101.38	July 5	a/ 87.39	16	102.20
Oct. 5	101.19	Aug. 2	a/ 87.35	Sept. 17	100.75
Nov. 3	101.58	Sept. 20	101.27	Oct. 24	100.64
Dec. 3	101.51	Oct. 20	101.04	Nov. 27	100.85
Jan. 7, 1932	101.21	Nov. 18	101.38	Dec. 31	100.69
Feb. 4	100.98	Dec. 21	101.15	Jan. 20, 1936	100.56
Mar. 3	101.07	Jan. 21, 1934	100.91	Mar. 28	100.51
Apr. 5	100.87	Feb. 22	100.68	June 6	102.16
May 5	100.82	Mar. 22	100.60	July 23	100.05
June 2	101.29	Apr. 20	100.46	Sept. 16	99.49
July 5	101.20	May 19	100.66	Nov. 27	100.29
Aug. 3	100.46				

309. J. Owings, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 11 N., R. 24 W. Drilled irrigation well, diameter 36 inches, depth 41 feet. Measuring point, top of casing, flush with land surface and 112.61 feet above datum. Water level Sept. 22, 1934, 14.97 feet below measuring point.

Sept. 22, 1934	97.64	July 16, 1935	102.04	Mar. 28, 1936	100.86
Nov. 15	98.69	Sept. 17	99.52	June 6	102.60
Dec. 27	100.01	Oct. 24	99.72	July 23	100.00
Mar. 1, 1935	99.93	Nov. 27	100.28	Sept. 16	97.98
Apr. 24	101.21	Dec. 31	100.44	Nov. 27	99.44
June 13	102.99	Jan. 20, 1936	100.49		

a/ Pumping.

Dawson County--Continued

310. J. Block, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 12 N., R. 25 W. Drilled irrigation well, diameter 24 inches, depth 65 feet. Measuring point, top of 6- by 8-inch brace, 0.5 foot above land surface and 129.39 feet above datum. Water level Sept. 22, 1934, 30.13 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 22, 1934	99.26	July 2, 1935	100.58	Jan. 20, 1936	100.44
Nov. 15	99.63	July 16	100.56	Mar. 28	100.13
Dec. 26, 1935	100.00	Sept. 17	100.48	June 6	100.44
Mar. 1	100.02	Oct. 24	100.54	July 23	99.85
Apr. 24	100.07	Nov. 27	100.57	Sept. 16	99.81
June 12	100.48	Dec. 31	100.53	Nov. 27	100.25

311. E. Clark, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 11 N., R. 25 W. Drilled irrigation well, diameter 16 inches, depth 28 feet. Measuring point, top of 2- by 8-inch brace, 1.5 feet above land surface and 113.29 feet above datum. Water level Nov. 3, 1930, 10.99 feet below measuring point.

Nov. 3, 1930	102.30	Sept. 6, 1932	102.58	June 17, 1934	101.15
Dec. 1	101.50	Oct. 5	101.61	July 16	101.17
Jan. 5, 1931	100.86	Nov. 2	105.01	Aug. 21	99.58
Feb. 2	100.56	Dec. 6	102.70	Sept. 22	99.66
Mar. 2	100.43	Jan. 4, 1933	102.19	Nov. 15	99.64
Apr. 6	100.76	Feb. 1	101.89	Dec. 27	100.00
May 4	100.71	Mar. 1	101.69	Mar. 1, 1935	100.03
June 1	100.29	Apr. 5	101.56	Apr. 24	104.29
July 6	100.23	May 3	103.87	June 13	106.27
Aug. 3	98.68	June 6	103.71	July 2	104.99
Sept. 7	99.14	July 5	102.78	Aug. 17	101.57
Oct. 5	98.94	Aug. 2	a/ 91.42	Sept. 17	101.00
Nov. 3	99.79	Sept. 20	102.03	Oct. 24	100.43
Dec. 3	103.23	Oct. 20	102.06	Nov. 27	100.37
Jan. 7, 1932	101.65	Nov. 18	103.63	Dec. 31	100.23
Feb. 4	101.08	Dec. 21	102.81	Jan. 20, 1936	100.27
Mar. 3	101.18	Jan. 21, 1934	102.83	Mar. 28	100.12
Apr. 5	100.99	Feb. 22	102.35	June 6	101.70
May 5	101.52	Mar. 22	102.07	July 23	99.92
June 2	101.37	Apr. 20	101.79	Sept. 16	98.81
July 5	101.90	May 19	101.85	Nov. 27	98.55

314. C. Myers, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 9 N., R. 21 W. Drilled irrigation well, diameter 24 inches, depth 35 feet. Measuring point, top of 3- by 12-inch plank, 0.5 foot above land surface and 112.16 feet above datum. Water level Aug. 11, 1932, 11.12 feet below measuring point.

Aug. 11, 1932	101.04	July 16, 1935	101.00	Jan. 10, 1936	100.61
Nov. 3, 1934	99.43	Aug. 16	99.61	Mar. 27	100.72
Dec. 27	99.99	Sept. 17	100.37	June 5	101.43
Feb. 19, 1935	100.13	Oct. 24	100.42	Sept. 16	99.10
Apr. 23	101.79	Nov. 27	100.57	Nov. 27	100.01
June 18	102.14	Dec. 31	100.58		

317. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 9 N., R. 21 W. Driven well, diameter 1 inch, depth 10.9 feet. Measuring point, top of pipe, 1.1 feet above land surface and 106.06 feet above datum. Water level Nov. 4, 1931, 5.60 feet below measuring point.

Nov. 4, 1931	100.46	Dec. 1, 1932	100.61	Nov. 17, 1933	100.56
Dec. 3	100.59	Jan. 4, 1933	100.73	Dec. 20	100.65
Jan. 6, 1932	100.59	31	100.73	Jan. 20, 1934	100.78
Mar. 2	100.97	Mar. 1	100.76	Feb. 21	100.82
May 4	100.81	Apr. 5	100.83	Mar. 20	100.93
June 1	102.13	May 2	101.61	Apr. 19	100.81
29	101.32	30	101.49	May 17	100.50
Aug. 3	101.78	July 5	100.55	June 18	99.85
31	100.77	Aug. 1	100.41	July 17	99.36
Oct. 5	100.87	Sept. 19	100.68	Sept. 21	98.67
Nov. 1	100.59	Oct. 19	100.75	Nov. 14	99.51

a/ Pumping.

Dawson County--Continued

317. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 27, 1934	99.98	Sept. 17, 1935	100.76	Mar. 28, 1936	100.94
Mar. 1, 1935	100.24	Oct. 24	100.69	June 5	101.86
Apr. 23	101.24	Nov. 27	100.63	July 22	99.81
June 18	102.16	Dec. 31	100.61	Sept. 16	98.74
July 16	101.09	Jan. 20, 1936	100.66	Nov. 27	100.28
Aug. 16	99.96				

318. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 9 N., R. 22 W. Driven well, diameter 1 inch, depth 20.9 feet. Measuring point, top of pipe, 1.2 feet above land surface and 116.41 feet above datum. Water level Nov. 4, 1931, 15.76 feet below measuring point.

Nov. 4, 1931	100.65	May 3, 1933	101.46	Dec. 27, 1934	100.00
Dec. 2	100.94	31	101.46	Mar. 1, 1935	100.46
Jan. 6, 1932	101.13	July 5	100.64	Apr. 22	100.52
Feb. 26	101.44	Aug. 2	100.31	June 12	101.35
Mar. 30	101.38	Sept. 19	100.52	July 16	100.97
May 4	101.28	Oct. 20	100.76	Aug. 17	100.05
June 1	101.04	Nov. 18	100.85	Sept. 17	100.60
29	101.34	Dec. 20	101.00	Oct. 24	100.52
Aug. 3	101.25	Jan. 20, 1934	101.10	Nov. 27	100.72
31	100.70	Feb. 21	101.11	Dec. 31	100.80
Oct. 5	100.71	Mar. 21	101.12	Jan. 20, 1936	100.86
Nov. 1	100.88	Apr. 19	101.10	Mar. 28	101.00
Dec. 1	100.96	May 18	100.63	June 6	100.99
Jan. 4, 1933	101.18	June 17	100.18	23	100.04
Feb. 1	101.22	July 16	99.86	Sept. 16	99.36
Mar. 1	101.27	Sept. 21	99.48	Nov. 27	99.71
Apr. 5	101.27	Nov. 14	99.59		

319. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 10 N., R. 22 W. Driven well, diameter 1 inch, depth 12.5 feet. Measuring point, top of pipe, 1.8 feet above land surface and 108.51 feet above datum. Water level Oct. 5, 1931, 7.26 feet below measuring point.

Oct. 5, 1931	101.25	Apr. 5, 1933	101.82	Nov. 14, 1934	100.81
Nov. 4	101.40	May 3	102.57	Dec. 27	99.96
Dec. 2	101.66	31	102.60	Mar. 1, 1935	100.41
Jan. 6, 1932	101.91	July 5	101.23	Apr. 22	100.71
Feb. 26	102.68	Aug. 2	100.76	June 13	102.33
Mar. 30	102.71	Sept. 20	100.74	July 16	101.56
May 4	102.61	Oct. 20	100.76	Aug. 17	100.54
June 1	102.20	Nov. 18	101.05	Sept. 17	101.40
29	102.51	Dec. 21	101.30	Oct. 24	101.18
Aug. 3	101.40	Jan. 20, 1934	101.50	Nov. 27	101.51
31	100.88	Feb. 21	101.65	Dec. 31	101.67
Oct. 5	100.68	Mar. 21	101.80	Jan. 20, 1936	101.76
Nov. 1	100.88	Apr. 20	101.98	Mar. 28	102.06
Dec. 1	101.12	May 18	101.16	June 6	102.86
Jan. 4, 1933	101.37	June 17	100.53	July 23	100.93
31	101.52	July 16	100.10	Sept. 16	100.01
Mar. 1	101.65	Sept. 21	99.48	Nov. 27	100.02

Deuel County

94. W. Kimball, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 1, T. 12 N., R. 42 W. Drilled irrigation well, diameter 24 inches, depth 39.9 feet. Measuring point, top of concrete curb, flush with land surface and 107.69 feet above datum. Water level Sept. 7, 1934, 8.50 feet below measuring point.

Sept. 7, 1934	99.19	July 3, 1935	101.27	Jan. 3, 1936	100.42
Nov. 19	99.63	July 19	100.45	23	100.52
Jan. 11, 1935	100.09	Aug. 21	99.39	Apr. 1	100.55
Mar. 8	100.23	Sept. 19	99.78	June 10	100.30
Apr. 28	100.27	Oct. 26	99.75	Aug. 31	98.07
June 16	101.91	Nov. 30	100.18	Dec. 4	99.50

Deuel County--Continued

130. Mrs. Jacobson, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 13 N., R. 45 W. Drilled well, diameter 4 inches, depth 92.4 feet. Measuring point, top of casing, 0.7 foot above land surface and 179.71 feet above datum. Water level Sept. 4, 1934, 79.56 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 4, 1934	100.15	July 19, 1935	99.99	Jan. 23, 1936	99.86
Nov. 19	100.12	Aug. 21	99.99	Apr. 1	99.89
Jan. 11, 1935	99.97	Sept. 19	100.07	June 10	99.88
Mar. 8	100.33	Oct. 26	100.02	Aug. 8	99.92
Apr. 28	100.04	Nov. 30	99.86	30	99.97
June 16	100.02	Jan. 3, 1936	99.89	Dec. 4	99.90

197. H. Burroughs, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 10, T. 13 N., R. 44 W. Drilled well, diameter 3 inches, depth 211.2 feet. Measuring point, top of pipe, 0.7 foot above land surface and 279.67 feet above datum. Water level Oct. 14, 1934, 179.95 feet below measuring point.

Oct. 14, 1934	99.72	July 19, 1935	99.96	Jan. 23, 1936	99.93
Nov. 19	100.28	Aug. 21	99.85	Apr. 1	100.06
Jan. 11, 1935	99.93	Sept. 19	100.09	June 10	99.92
Mar. 8	100.26	Oct. 26	99.98	Aug. 8	100.22
Apr. 28	99.85	Nov. 30	99.91	30	100.18
June 16	100.17	Jan. 3, 1936	100.39		

Dixon County

107. F. Beyeler, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 31 N., R. 4 E. Dug well, diameter 54 inches, depth 20.1 feet. Measuring point, top of concrete curb, 0.5 foot above land surface and 109.59 feet above datum. Water level Aug. 14, 1934, 10.19 feet below measuring point.

Aug. 14, 1934	99.40	Aug. 3, 1935	99.55	Mar. 20, 1936	100.26
Oct. 31	99.64	Sept. 7	99.52	May 25	100.15
Dec. 18	99.97	Oct. 11	99.52	July 10	99.59
Feb. 13, 1935	100.07	Nov. 16	99.69	Aug. 2	99.46
May 28	100.09	Dec. 19	99.85	Oct. 26	99.52
July 6	99.73	Jan. 8, 1936	99.89		

333. F. Mille, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 30 N., R. 6 E. Dug well, diameter 36 inches, depth 29.5 feet. Measuring point, top of well platform, 0.6 foot above land surface and 119.14 feet above datum. Water level Aug. 3, 1935, 18.51 feet below measuring point.

Aug. 3, 1935	100.63	Dec. 19, 1935	100.51	July 10, 1936	100.50
Sept. 7	100.34	Jan. 8, 1936	100.64	Aug. 2	99.30
Oct. 11	100.06	Mar. 20	103.04	Oct. 26	99.91
Nov. 16	100.41	May 25	101.46		

340. P. Lamb, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T. 31 N., R. 5 E. Dug well, diameter 36 inches, depth 48.9 feet. Measuring point, top of iron plate, 0.4 foot above land surface and 146.92 feet above datum. Water level Sept. 7, 1935, 46.46 feet below measuring point.

Sept. 7, 1935	100.46	Jan. 8, 1936	100.19	July 10, 1936	100.15
Oct. 11	100.37	Mar. 20	100.94	Aug. 2	99.98
Nov. 16	100.38	May 25	100.33	Oct. 26	99.87
Dec. 19	100.40				

Dodge County

29. A. Schaefersman, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 19 N., R. 8 E. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 23 feet. Measuring point, top of pump head, 3.4 feet above land surface and 112.68 feet above datum. Water level July 31, 1934, 13.01 feet below measuring point.

July 31, 1934	99.67	Dec. 15, 1934	99.91	Apr. 9, 1935	100.67
Oct. 29	99.43	Feb. 11, 1935	100.26	May 25	101.17

Dodge County--Continued

29. A. Schaefersman.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 3, 1935	101.50	Nov. 14, 1935	99.90	May 21, 1936	100.90
Aug. 2	100.53	Dec. 18	100.15	July 8	99.92
Sept. 5	99.83	Jan. 6, 1936	100.25	31	99.53
Oct. 9	99.46	Mar. 18	101.51	Oct. 20	99.26

31. J. Wieser, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 17 N., R. 9 E. Drilled irrigation well, diameter 18 inches, depth 24.7 feet. Measuring point, top of casing, 1.0 foot below land surface and 109.16 feet above datum. Water level Aug. 1, 1934, 9.55 feet below measuring point.

Aug. 1, 1934	99.61	July 3, 1935	100.92	Jan. 6, 1936	99.85
Oct. 26	99.80	Aug. 1	100.40	Mar. 18	100.85
Dec. 14	99.96	Sept. 5	99.88	May 21	100.86
Feb. 11, 1935	100.09	Oct. 9	99.53	July 8	100.25
Apr. 8	100.52	Nov. 14	99.69	30	99.94
May 25	100.76	Dec. 18	99.81	Oct. 20	99.46

34. R. Mahaffey, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 17 N., R. 6 E. Drilled irrigation well, diameter 4 inches, depth 25.1 feet. Measuring point, top of pipe, flush with land surface and 104.44 feet above datum. Water level Aug. 3, 1934, 6.42 feet below measuring point.

Aug. 3, 1934	98.02	July 3, 1935	100.04	Jan. 6, 1936	99.86
Oct. 27	99.00	Aug. 2	98.59	Mar. 18	100.40
Dec. 14	99.61	Sept. 5	98.94	May 22	99.31
Feb. 11, 1935	100.90	Oct. 9	98.49	July 8	97.87
Apr. 9	99.86	Nov. 14	99.04	31	97.44
May 25	100.54	Dec. 18	99.39	Oct. 21	98.52

Douglas County

24. Robinson Seed Co., SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 15 N., R. 10 E. Drilled irrigation well, diameter 8 inches, depth 29.9 feet. Measuring point, top of casing, 0.8 foot above land surface and 108.12 feet above datum. Water level July 24, 1934, 10.15 feet below measuring point.

July 24, 1934	97.97	July 3, 1935	99.93	Jan. 6, 1936	99.87
Oct. 26	99.31	Sept. 5	99.27	Mar. 18	100.86
Dec. 14	99.92	Oct. 9	99.12	July 8	99.54
Feb. 11, 1935	100.21	Nov. 14	99.69	30	98.67
Apr. 8	99.97	Dec. 18	99.89	Oct. 20	99.20
May 25	100.35				

324. W. Briggs, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T. 15 N., R. 10 E. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 26.2 feet. Measuring point, top of pipe, 3.7 feet above land surface and 115.45 feet above datum. Water level Dec. 14, 1934, 15.53 feet below measuring point.

Dec. 14, 1934	99.92	Sept. 5, 1935	100.29	Mar. 18, 1936	101.39
Feb. 11, 1935	100.17	Oct. 9	100.03	May 21	100.96
Apr. 8	100.62	Nov. 14	100.15	July 8	100.66
May 25	100.84	Dec. 18	100.47	30	100.22
July 3	101.18	Jan. 6, 1936	100.56	Oct. 20	99.55
Aug. 1	101.02				

Dundy County

177. G. Russell, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 3 N., R. 37 W. Drilled well, diameter 4 inches, depth 97.7 feet. Measuring point, top of casing, 1.9 feet above land surface and 175.86 feet above datum. Water level Sept. 24, 1934, 75.88 feet below measuring point.

Sept. 24, 1934	99.98	Mar. 9, 1935	99.89	July 19, 1935	100.04
Nov. 21	99.89	Apr. 29	99.86	Aug. 22	99.98
Jan. 11, 1935	100.03	June 16	100.04	Sept. 25	99.96

Dundy County--Continued

177. G. Russell.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 27, 1935	100.09	Jan. 23, 1936	100.07	Aug. 10, 1936	100.00
Dec. 1	99.90	Apr. 2	99.92	Sept. 19	100.02
Jan. 3, 1936	99.91	June 12	100.05	Dec. 6	100.02

361. O. Scrivner, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 1 N., R. 41 W. Drilled well, diameter 4 inches, depth 77 feet. Measuring point, top of casing, 1.2 feet above land surface and 131.33 feet above datum. Water level Oct. 27, 1935, 31.31 feet below measuring point.

Oct. 27, 1935	100.02	Jan. 23, 1936	100.45	Aug. 10, 1936	99.72
Dec. 1	100.13	Apr. 2	99.95	Sept. 19	99.55
Jan. 4, 1936	100.24	June 12	100.73	Dec. 6	100.05

380. L. Krutsinger, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 1 N., R. 39 W. Drilled well, diameter 6 inches, depth 15.5 feet. Measuring point, top of casing, flush with land surface and 105.18 feet above datum. Water level Dec. 1, 1935, 4.87 feet below measuring point.

Dec. 1, 1935	100.31	Apr. 2, 1936	100.39	Sept. 19, 1936	99.65
Jan. 4, 1936	100.33	June 12	100.46	Dec. 6	100.28
23	100.37	Aug. 10	99.72		

381. M. Wilkison, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 3 N., R. 39 W. Drilled well, diameter 6 inches, depth 59 feet. Measuring point, top of casing, 1.9 feet above land surface and 141.55 feet above datum. Water level Dec. 1, 1935, 41.35 feet below measuring point.

Dec. 1, 1935	100.20	Apr. 2, 1936	100.04	Sept. 19, 1936	100.03
Jan. 4, 1936	100.50	Aug. 9	100.03	Dec. 6	99.86
23	100.30				

Fillmore County

174. G. Taylor, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 7 N., R. 2 W. Drilled well, diameter 3 inches, depth to top of pump cylinder 85 feet. Measuring point, top of iron plate, 0.7 foot above land surface and 169.13 feet above datum. Water level Oct. 6, 1934, 69.06 feet below measuring point.

Oct. 6, 1934	100.07	July 24, 1935	99.94	Jan. 28, 1936	99.90
Dec. 2	100.25	Aug. 27	99.85	Apr. 5	99.89
Jan. 23, 1935	99.82	Sept. 30	100.00	June 15	99.82
Mar. 15	100.56	Oct. 31	99.83	Aug. 13	99.66
May 14	100.02	Dec. 6	100.07	Sept. 22	99.63
June 27	100.00	Jan. 8, 1936	100.04	Dec. 16	99.69

191. E. Zelenke, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 7 N., R. 2 W. Drilled well, diameter 12 inches, depth 52.4 feet. Measuring point, top of tile casing, 0.9 foot above land surface and 125.33 feet above datum. Water level Oct. 2, 1934, 25.28 feet below measuring point.

Oct. 2, 1934	100.05	July 24, 1935	100.11	Jan. 28, 1936	100.01
Dec. 2	100.14	Aug. 27	99.87	Apr. 5	99.94
Jan. 23, 1935	99.89	Sept. 30	99.94	June 15	99.81
Mar. 15	100.58	Oct. 31	99.82	Aug. 13	99.59
May 14	100.04	Dec. 6	100.08	Sept. 22	99.60
June 27	100.25	Jan. 8, 1936	100.08	Dec. 16	99.60

Fillmore County--Continued

192. H. Wernimont, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 3, T. 5 N., R. 2 W. Drilled well, diameter 4 inches, depth 72.3 feet. Measuring point, top of 1 $\frac{1}{2}$ -inch pipe in concrete base, 0.7 foot above land surface and 161.59 feet above datum. Water level Oct. 2, 1934, 61.43 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1934	100.16	July 24, 1935	99.95	Jan. 28, 1936	99.86
Dec. 2	100.17	Aug. 27	99.91	Apr. 5	99.85
Jan. 23, 1935	99.88	Sept. 30	99.98	June 15	99.78
Mar. 15	100.30	Oct. 31	99.82	Aug. 13	99.73
May 14	100.02	Dec. 6	100.03	Sept. 22	99.74
June 27	99.98	Jan. 8, 1936	99.96	Dec. 18	99.64

Franklin County

156. J. Wessels, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 2 N., R. 15 W. Drilled well, diameter 6 inches, depth 32.2 feet. Measuring point, top of casing, 2.1 feet above land surface and 130.36 feet above datum. Water level Sept. 27, 1934, 31.20 feet below measuring point.

Sept. 27, 1934	99.16	July 23, 1935	99.48	Jan. 27, 1936	100.09
Nov. 30	99.75	Aug. 24	99.63	Apr. 4	100.25
Jan. 21, 1935	100.16	Sept. 27	99.29	June 14	100.23
Mar. 13	100.37	Oct. 30	99.54	Aug. 12	99.17
May 12	100.29	Dec. 4	99.76	21	98.98
June 21	100.21	Jan. 7, 1936	99.96	Dec. 12	99.69

221. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T. 3 N., R. 14 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 30.5 feet. Measuring point, top of pipe, 2.6 feet above land surface and 120.81 feet above datum. Water level Oct. 30, 1934, 21.02 feet below measuring point.

Oct. 30, 1934	99.79	Aug. 26, 1935	99.70	Apr. 4, 1936	99.50
Nov. 21, 1935	100.06	Sept. 27	100.26	June 14	99.63
Mar. 13	99.60	Oct. 30	99.79	Aug. 12	99.63
May 12	99.51	Dec. 4	99.97	21	99.58
June 21	99.94	Jan. 7, 1936	99.49	Dec. 12	99.30
July 23	99.89	27	99.21		

224. Gilgen Bros., NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 10, T. 4 N., R. 14 W. Drilled irrigation well, diameter 12 $\frac{1}{2}$ inches, depth 212.9 feet. Measuring point, top of pump base, 2.3 feet above land surface and 269.63 feet above datum. Water level Mar. 13, 1935, 169.04 feet below measuring point.

Mar. 13, 1935	100.59	Oct. 30, 1935	100.67	June 14, 1936	100.48
May 12	100.21	Dec. 4	100.49	Aug. 21	99.37
June 21	100.34	Jan. 7, 1936	100.01	Dec. 11	100.50
Sept. 27	100.06	27	100.09		

Frontier County

135. R. Taylor, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 7 N., R. 28 W. Drilled well, diameter 4 inches, depth 196.8 feet. Measuring point, top of iron plate, 0.5 foot above land surface and 293.52 feet above datum. Water level Nov. 23, 1934, 193.25 feet below measuring point.

Nov. 23, 1934	100.27	July 20, 1935	100.28	Jan. 6, 1936	99.59
Jan. 14, 1935	99.96	Aug. 23	100.01	24	99.97
Mar. 11	99.90	Sept. 26	99.61	Aug. 10	100.11
May 1	100.43	Oct. 29	100.44	Sept. 18	99.86
June 18	99.99	Dec. 3	99.89	Dec. 8	99.84

Frontier County--Continued

136. O. Worley, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 7 N., R. 27 W. Drilled well, diameter 4 inches, depth 79 feet. Measuring point, top of pump base at hole, 0.6 foot above land surface and 153.35 feet above datum. Water level Sept. 6, 1934, 53.85 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 6, 1934	99.50	Aug. 23, 1935	101.97	Jan. 24, 1936	100.13
Jan. 14, 1935	100.07	Sept. 26	99.87	Apr. 3	100.21
Mar. 11	99.73	Oct. 29	99.96	Aug. 10	99.47
May 1	100.03	Dec. 3	99.94	Sept. 18	99.25
June 18	101.48	Jan. 6, 1936	99.96	Dec. 8	99.81
July 20	100.42				

Furnas County

145. G. Sayer, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 26, T. 4 N., R. 25 W. Dug well, diameter 36 inches, depth 23.1 feet. Measuring point, top of iron plate, 0.8 foot above land surface and 120.50 feet above datum. Water level Sept. 8, 1934, 20.95 feet below measuring point.

Sept. 8, 1934	99.55	July 22, 1935	101.19	Apr. 3, 1936	101.35
Nov. 24	99.84	Sept. 26	100.95	June 13	101.49
Jan. 15, 1935	100.06	Oct. 29	101.15	Aug. 11	100.48
Mar. 12	100.26	Dec. 3	101.18	Sept. 20	99.97
May 11	100.45	Jan. 6, 1936	101.23	Dec. 9	100.01
June 20	100.95	25	101.25		

147. H. Lambert, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 3 N., R. 23 W. Drilled well, diameter 3 inches, depth 132.2 feet. Measuring point, top of pump base at hole, 1.2 feet above land surface and 200.18 feet above datum. Water level Nov. 26, 1934, 100.25 feet below measuring point.

Nov. 26, 1934	99.93	Aug. 23, 1935	99.85	Jan. 25, 1936	99.43
Jan. 15, 1935	100.03	Sept. 26	99.43	June 13	99.74
Mar. 12	100.00	Oct. 29	100.03	Aug. 11	100.10
May 11	99.95	Dec. 3	99.50	Sept. 20	99.64
July 22	99.77	Jan. 6, 1936	99.26	Dec. 9	99.60

148. E. Stockton, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 2 N., R. 22 W. Drilled well, diameter 4 inches, depth 30.2 feet. Measuring point, top of casing, 0.8 foot above land surface and 122.56 feet above datum. Water level Sept. 22, 1934, 22.84 feet below measuring point.

Sept. 22, 1934	99.72	Aug. 23, 1935	100.34	Apr. 3, 1936	101.67
Nov. 26	99.85	July 26	101.01	June 13	101.79
Jan. 15, 1935	100.06	Oct. 29	100.86	Aug. 11	100.36
Mar. 12	100.18	Dec. 3	100.86	Sept. 20	99.82
May 11	100.02	Jan. 6, 1936	101.33	Dec. 9	100.09
July 22	101.28	25	101.50		

149. S. Shoemaker, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 1 N., R. 25 W. Drilled well, diameter 4 inches, depth 28.1 feet. Measuring point, top of casing, 2.2 feet above land surface and 110.45 feet above datum. Water level Sept. 22, 1934, 9.48 feet below measuring point.

Sept. 22, 1934	100.97	Aug. 23, 1935	100.16	Apr. 3, 1936	101.04
Nov. 24	100.05	Sept. 26	102.55	June 13	101.27
Jan. 15, 1935	99.98	Oct. 29	101.48	Aug. 11	99.53
Mar. 12	100.17	Jan. 6, 1936	101.14	Sept. 20	99.36
May 11	99.66	25	101.05	Dec. 9	99.65
July 22	101.91				

Furnas County--Continued

180. A. Askey, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 3 N., R. 21 W. Drilled well, diameter 4 inches, depth 80.6 feet. Measuring point, top of iron plate, 0.6 foot above land surface and 170.18 feet above datum. Water level Sept. 25, 1934, 70.34 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 25, 1934	99.84	July 22, 1935	99.88	Jan. 25, 1936	99.65
Nov. 26	99.93	Aug. 24	99.83	Apr. 3	99.93
Jan. 15, 1935	100.01	Sept. 26	99.70	June 13	99.89
Mar. 12	100.01	Oct. 29	99.82	Aug. 11	99.62
May 11	99.97	Dec. 3	99.68	Sept. 20	99.60
June 20	100.04	Jan. 6, 1936	99.66	Dec. 11	99.52

387. J. Loar, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 2 N., R. 25 W. Drilled irrigation well, diameter 24 inches, depth 65 feet. Measuring point, top of steel channel beam, 0.5 foot above land surface and 124.69 feet above datum. Water level Dec. 3, 1935, 24.10 feet below measuring point.

Dec. 3, 1935	100.59	Apr. 3, 1936	100.74	Sept. 20, 1936	99.17
Jan. 6, 1936	100.59	June 13	100.84	Dec. 9	99.62
25	100.58	Aug. 11	99.06		

388. E. Hunt, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 2 N., R. 25 W. Drilled well, diameter 6 inches, depth 36 feet. Measuring point, hole in side of casing, 0.6 foot above land surface and 117.43 feet above datum. Water level Dec. 3, 1935, 16.77 feet below measuring point.

Dec. 3, 1935	100.66	Apr. 3, 1936	100.72	Sept. 20, 1936	99.42
Jan. 6, 1936	100.58	June 13	100.98	Dec. 9	99.78
25	100.57	Aug. 11	99.24		

Gage County

230. J. Witzenburg, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 2 N., R. 6 E. Drilled well, diameter 6 inches, depth 85 feet. Measuring point, top of iron plate, 0.7 foot above land surface and 173.16 feet above datum. Water level Oct. 8, 1934, 73.14 feet below measuring point.

Oct. 8, 1934	100.02	Aug. 29, 1935	101.18	Apr. 6, 1936	100.76
Dec. 4	100.06	Oct. 1	100.99	June 16	99.95
Jan. 23, 1935	99.96	Nov. 1	100.51	Aug. 14	100.53
Mar. 15	100.79	Dec. 7	100.67	Sept. 23	100.44
June 26	101.17	Jan. 9, 1936	100.50	Dec. 19	101.68
July 25	101.37	29	100.28		

231. E. Miller, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 31, T. 5 N., R. 5 E. Drilled well, diameter 4 inches, depth 61.9 feet. Measuring point, top of iron plate, 0.6 foot above land surface and 148.99 feet above datum. Water level Oct. 8, 1934, 48.93 feet below measuring point.

Oct. 8, 1934	100.06	July 25, 1935	100.24	Jan. 29, 1936	100.05
Dec. 4	100.00	Aug. 29	100.20	Apr. 6	100.15
Jan. 23, 1935	100.00	Oct. 1	100.15	June 16	100.12
Mar. 16	99.95	Nov. 1	100.09	Aug. 14	100.00
May 14	99.99	Dec. 7	100.09	Sept. 23	99.93
June 26	100.13	Jan. 9, 1936	100.05	Dec. 19	99.86

Garden County

3. United States Biological Survey, north side of Crescent Lake. Driven well, diameter $1\frac{1}{2}$ inches, depth about 8 feet. Measuring point, top of pipe, 1.2 feet above land surface and 3,792.99 feet above sea level. Water level Jan. 2, 1936, 6.31 feet below measuring point. Water levels given below are expressed in feet above sea level minus 3,700. Previous measurements appear in Water-Supply Paper 777, pages 93 and 94.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 2, 1936	86.68	Feb. 24, 1936	86.54	May 5, 1936	86.44
14	86.59	Mar. 7	86.53	July 22	85.82
22	86.59	17	86.78	Oct. 4	85.39
Feb. 4	86.57	Apr. 20	86.46	Nov. 18	85.40

96. Village of Lewellen, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 16 N., R. 42 W. Driven well, diameter $1\frac{1}{2}$ inches, depth 18.9 feet. Measuring point, top of pipe, 2.4 feet above land surface and 106.03 feet above datum. Water level Sept. 7, 1934, 6.97 feet below measuring point.

Sept. 7, 1934	99.16	July 17, 1935	99.82	Jan. 21, 1936	100.98
Nov. 16	99.94	Aug. 19	100.03	Mar. 31	101.07
Jan. 9, 1935	100.01	Sept. 18	100.55	June 8	100.93
Mar. 4	100.08	Oct. 25	100.97	Aug. 7	100.21
Apr. 25	101.40	Nov. 28	101.16	Sept. 10	100.26
June 14	100.95	Jan. 1, 1936	101.11	Nov. 30	100.77

218. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 17 N., R. 46 W. Driven well, diameter 1 inch, depth 17.3 feet. Measuring point, top of pipe, 2.2 feet above land surface and 106.23 feet above datum. Water level Dec. 7, 1934, 5.95 feet below measuring point.

Dec. 7, 1934	100.28	Aug. 19, 1935	99.05	Mar. 31, 1936	99.32
Jan. 9, 1935	99.91	Sept. 18	99.66	June 8	99.67
Mar. 4	99.63	Oct. 25	100.61	Aug. 7	100.15
Apr. 25	102.06	Nov. 28	99.83	Sept. 10	99.33
June 14	100.59	Jan. 1, 1936	99.54	Nov. 13	100.78
July 17	99.55	21	99.41		

326. G. Morris, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 22, T. 17 N., R. 44 W. Driven well, diameter $1\frac{1}{2}$ inches, depth 34.5 feet. Measuring point, top of pipe, 3.1 feet above land surface and 123.91 feet above datum. Water level Jan. 9, 1935, 24.03 feet below measuring point.

Jan. 9, 1935	99.88	Sept. 18, 1935	97.09	Mar. 31, 1936	97.69
Mar. 4	99.18	Oct. 25	100.03	June 8	97.54
Apr. 25	99.69	Nov. 28	99.08	Aug. 7	96.32
June 14	99.95	Jan. 1, 1936	98.24	Sept. 10	95.68
July 17	98.02	21	98.04	Nov. 30	95.83
Aug. 19	97.78				

Garfield County

55. F. Robke, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 21 N., R. 16 W. Drilled irrigation well, diameter 24 inches, depth 52.7 feet. Measuring point, top of 4- by 6-inch sill, flush with land surface and 126.90 feet above datum. Water level Aug. 10, 1934, 27.06 feet below measuring point.

Aug. 10, 1934	99.84	July 10, 1935	100.39	Dec. 22, 1935	100.20
Nov. 6	99.91	Aug. 9	100.25	Jan. 11, 1936	100.26
Dec. 29	100.00	Sept. 11	100.21	Mar. 24	100.27
Feb. 20, 1935	100.10	Oct. 16	100.15	Sept. 15	99.95
Apr. 15	100.19	Nov. 20	100.15	Nov. 6	99.83
June 11	100.31				

Gosper County

182. Larson estate, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 7 N., R. 21 W. Drilled well, diameter 3 inches, depth 132.3 feet. Measuring point, top of pipe, 0.4 foot above land surface and 217.85 feet above datum. Water level Sept. 27, 1934, 117.99 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 27, 1934	99.86	July 22, 1935	99.89	Jan. 7, 1936	99.67
Nov. 15	99.89	Aug. 24	99.83	Aug. 25	99.66
Dec. 27	100.00	Sept. 26	99.65	Aug. 12	99.92
Mar. 1, 1935	100.00	Oct. 30	99.91	Sept. 21	99.88
May 2	100.04	Dec. 4	99.78	Dec. 10	99.69
June 20	99.97				

183. M. Berntson, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 12, T. 5 N., R. 22 W. Drilled well, diameter 4 inches, depth 128.5 feet. Measuring point, top of casing, flush with land surface and 217.61 feet above datum. Water level Sept. 27, 1934, 117.68 feet below measuring point.

Sept. 27, 1934	99.93	May 11, 1935	100.72	Jan. 25, 1936	100.56
Nov. 26	100.21	June 21	100.93	Sept. 20	99.98
Jan. 15, 1935	99.91	Jan. 6, 1936	100.54	Dec. 10	99.68
Mar. 12	100.75				

307. ---, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 8 N., R. 21 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 23.5 feet. Measuring point, top of pipe, 0.5 foot above land surface and 120.01 feet above datum. Water level Oct. 1, 1930, 18.69 feet below measuring point.

Oct. 1, 1930	101.32	Aug. 2, 1932	101.08	June 17, 1934	100.63
Nov. 3	101.38	Sept. 6	101.33	July 16	100.48
Dec. 1	101.49	Oct. 4	101.07	Aug. 21	100.25
Jan. 5, 1931	101.55	Nov. 1	100.97	Sept. 21	100.10
Feb. 2	101.54	Dec. 6	101.02	Nov. 14	99.98
Mar. 2	101.59	Jan. 3, 1933	101.05	Dec. 24	99.98
Apr. 6	101.65	Feb. 1	101.14	Feb. 28, 1935	100.17
May 4	101.83	Mar. 1	101.17	Apr. 22	100.33
June 1	101.85	Apr. 5	101.23	June 12	100.66
July 6	101.80	May 3	101.29	July 16	100.79
Aug. 3	101.51	June 6	101.45	Aug. 17	100.48
Sept. 7	101.19	July 5	101.24	Sept. 17	100.73
Oct. 5	100.96	Aug. 2	101.00	Oct. 24	100.67
Nov. 4	100.79	Sept. 27	100.75	Nov. 27	100.71
Dec. 2	100.74	Oct. 20	100.70	Dec. 31	100.74
Jan. 6, 1932	100.82	Nov. 18	100.70	Jan. 20, 1936	100.75
Feb. 4	100.90	Dec. 20	100.79	Mar. 28	100.87
Mar. 2	101.10	Jan. 20, 1934	100.87	June 6	100.92
Apr. 5	101.20	Feb. 21	100.98	July 23	100.54
May 4	101.15	Mar. 21	101.02	Sept. 16	100.15
June 1	101.05	Apr. 19	101.03	Nov. 27	99.91
July 5	101.08	May 18	100.85		

Grant County

215. University of Nebraska, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T. 24 N., R. 37 W. Driven well, diameter 1 inch, depth 15.4 feet. Measuring point, top of pipe, 1.2 feet above land surface and 105.83 feet above datum. Water level Dec. 18, 1934, 5.91 feet below measuring point.

Dec. 18, 1934	99.92	Aug. 15, 1935	99.56	Jan. 18, 1936	100.00
Jan. 5, 1935	100.02	Sept. 16	99.60	Mar. 27	100.43
Feb. 26	100.23	Oct. 23	99.58	June 3	100.19
Apr. 20	100.49	Nov. 26	99.78	Aug. 27	99.90
June 8	101.04	Dec. 30	99.93	Nov. 24	99.26
July 15	100.25				

Grant County--Continued

216. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 24 N., R. 40 W.
Driven well, diameter 1 inch, depth 20.9 feet. Measuring point, top
of pipe, 1.0 foot above land surface and 113.81 feet above datum. Water
level Dec. 18, 1934, 13.87 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 18, 1934	99.94	Aug. 15, 1935	100.19	Mar. 27, 1936	100.03
Jan. 5, 1935	100.01	Sept. 16	99.94	June 3	100.00
Feb. 26	99.97	Oct. 23	99.95	July 21	99.71
Apr. 20	100.10	Nov. 26	99.91	Aug. 27	99.52
June 8	100.49	Dec. 30	99.90	Nov. 24	99.44
July 15	100.40	Jan. 18, 1936	99.90		

Greeley County

206. University of Nebraska, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 20 N., R. 9 W.
Driven well, diameter 1 inch, depth 16.3 feet. Measuring point, top of
pipe, 1.4 feet above land surface and 103.40 feet above datum. Water
level Jan. 1, 1935, 3.40 feet below measuring point.

Jan. 1, 1935	100.00	Sept. 11, 1935	99.45	Mar. 24, 1936	100.22
Feb. 21	100.15	Oct. 16	99.33	May 30	99.40
Apr. 16	99.89	Nov. 20	100.70	July 16	98.74
June 3	99.89	Dec. 23	99.81	Sept. 14	98.89
July 11	99.65	Jan. 12, 1936	100.29	Nov. 6	99.53
Aug. 9	98.73				

347. University of Nebraska, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 10, T. 17 N., R. 10 W.
Bored well, diameter 3 inches, depth 20 feet. Measuring point, top of
casing, 0.9 foot above land surface and 115.80 feet above datum. Water
level Nov. 15, 1935, 15.29 feet below measuring point.

Nov. 15, 1935	100.51	Jan. 12, 1936	100.62	Nov. 6, 1936	99.68
Dec. 23	100.56	Mar. 24	101.10		

Hall County

244. C. Cole, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 10 N., R. 9 W. Drilled irriga-
tion well, diameter 24 inches, depth 28 feet. Measuring point, top of
steel beam, flush with land surface and 116.63 feet above datum. Water
level June 11, 1931, 14.39 feet below measuring point.

June 11, 1931	102.24	May 1, 1933	102.28	Nov. 2, 1935	99.72
July 2	101.45	June 5	102.23	Dec. 20	99.65
Jan. 21, 1932	101.99	July 3	101.62	Feb. 18, 1935	101.40
Feb. 2	102.12	Aug. 7	100.93	Apr. 13	101.44
Apr. 4	102.67	Sept. 18	100.96	May 30	101.89
May 2	102.35	Oct. 18	101.43	June 30	102.63
June 6	102.21	Nov. 16	101.63	Aug. 7	101.49
July 4	102.45	Dec. 18	101.84	Sept. 9	100.93
Aug. 1	101.66	Jan. 18, 1934	102.20	Oct. 14	100.62
Sept. 5	101.05	Feb. 19	102.47	Nov. 18	100.85
Oct. 3	100.73	Mar. 19	102.33	Dec. 21	101.30
Nov. 7	101.27	Apr. 17	102.14	Jan. 10, 1936	101.36
Dec. 5	101.63	May 16	101.89	May 27	101.53
Jan. 2, 1933	101.84	June 19	101.19	July 13	100.90
Feb. 6	102.14	July 18	100.41	Aug. 5	100.43
Mar. 6	102.26	Aug. 20	100.23	19	100.20
Apr. 3	102.25	Sept. 20	99.97	Oct. 29	99.52

245. University of Nebraska, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 11 N., R. 9 W.
Driven well, diameter 1 inch, depth 12.1 feet. Measuring point, top of
pipe, 2.0 feet above land surface and 109.57 feet above datum. Water
level Jan. 21, 1932, 7.02 feet below measuring point.

Jan. 21, 1932	102.55	June 6, 1932	106.37	Nov. 7, 1932	101.52
Feb. 2	102.65	July 4	103.48	Dec. 5	101.96
Mar. 7	103.76	Aug. 1	102.82	Jan. 2, 1933	102.43
Apr. 4	103.20	Sept. 5	101.94	Feb. 6	102.12
May 2	102.71	Oct. 3	101.66	Mar. 6	101.95

Hall County--Continued

245. University of Nebraska.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 3, 1933	102.05	Apr. 17, 1934	101.83	Aug. 7, 1935	101.68
May 1	102.34	May 16	101.37	Sept. 9	102.14
June 5	102.23	June 19	100.99	Oct. 14	101.35
July 3	101.42	July 18	100.77	Nov. 18	101.43
Aug. 7	101.17	Aug. 20	100.42	Dec. 21	101.95
Sept. 18	101.12	Sept. 20	100.19	Jan. 10, 1936	101.98
Oct. 18	100.83	Nov. 2	100.11	Mar. 21	102.50
Nov. 16	100.94	Dec. 20	100.00	May 27	101.79
Dec. 18	101.53	Feb. 18, 1935	100.01	July 13	101.18
Jan. 18, 1934	101.63	Apr. 13	100.24	Aug. 5	100.77
Feb. 19	101.95	May 30	101.85	19	100.65
Mar. 19	102.14	June 30	103.44	Oct. 29	100.08

246. F. Dahlstrom, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 10 N., R. 10 W. Drilled irrigation well, diameter 2 $\frac{1}{2}$ inches, depth 90 feet. Measuring point, top of pump base, 1.0 foot above land surface and 123.62 feet above datum. Water level June 22, 1931, 22.48 feet below measuring point.

June 22, 1931	101.14	June 5, 1932	101.02	Dec. 20, 1934	100.02
Jan. 18, 1932	100.53	July 3	100.40	Feb. 18, 1935	99.90
Feb. 2	100.62	Aug. 7	100.19	Apr. 13	100.02
Mar. 7	101.75	Sept. 18	100.43	May 30	100.58
Apr. 4	101.37	Oct. 18	100.23	July 1	102.36
May 2	101.36	Nov. 16	100.26	Aug. 7	100.70
June 6	103.20	Dec. 18	100.37	Sept. 9	101.34
July 4	102.05	Jan. 18, 1934	100.27	Oct. 14	100.66
Aug. 1	101.42	Feb. 19	100.33	Nov. 18	100.67
Sept. 5	101.16	Mar. 19	100.39	Dec. 21	100.63
Oct. 3	100.99	Apr. 17	100.45	Jan. 10, 1936	100.50
Nov. 7	100.97	May 16	100.21	Mar. 21	100.94
Dec. 5	100.99	June 19	99.96	May 27	100.63
Jan. 2, 1933	100.89	July 18	a/ 84.27	July 13	99.70
Feb. 6	100.80	Aug. 20	99.38	Aug. 5	99.53
Mar. 6	100.89	Sept. 20	99.53	20	99.52
Apr. 3	100.85	Nov. 2	99.91	Oct. 29	99.70
May 1	101.12				

247. E. Batie, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 36, T. 11 N., R. 11 W. Drilled irrigation well, diameter 9 $\frac{1}{2}$ inches, depth 71 feet. Measuring point, top of steel beam, 0.5 foot above land surface and 122.15 feet above datum. Water level Nov. 4, 1930, 20.42 feet below measuring point.

Nov. 4, 1930	101.73	Aug. 1, 1932	100.35	May 16, 1934	100.44
Dec. 2	101.67	Sept. 5	101.35	June 19	100.30
Jan. 6, 1931	101.61	Oct. 3	101.38	July 18	a/ 87.80
Feb. 3	101.54	Nov. 7	101.34	Aug. 20	99.53
Mar. 3	101.53	Dec. 5	101.32	Sept. 20	100.04
Apr. 7	101.53	Jan. 2, 1933	101.26	Nov. 2	100.08
May 5	101.52	Feb. 6	101.17	Dec. 20	100.01
June 2	101.56	Mar. 6	101.15	Feb. 18, 1935	99.91
July 7	101.58	Apr. 3	101.12	Apr. 13	99.90
Aug. 4	a/ 88.25	May 1	101.09	May 30	99.86
Sept. 1	100.62	June 5	101.07	July 8	101.01
Oct. 6	101.12	July 3	101.03	Aug. 7	a/ 88.10
Nov. 2	101.14	Aug. 7	99.78	Sept. 9	100.54
Dec. 9	101.09	Sept. 18	100.75	Oct. 14	100.57
Jan. 4, 1932	101.08	Oct. 18	100.77	Nov. 18	100.54
Feb. 1	101.07	Nov. 16	100.71	Dec. 21	100.47
Mar. 7	101.29	Dec. 18	100.64	Jan. 10, 1936	100.42
Apr. 4	101.32	Jan. 18, 1934	100.61	Mar. 21	100.49
May 2	101.29	Feb. 19	100.59	May 27	100.27
June 6	101.25	Mar. 19	100.56	July 13	99.34
July 4	101.60	Apr. 17	100.49	Oct. 29	99.79

a/ Pumping.

Hall County--Continued

249. F. Hughes, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 11 N., R. 11 W. Drilled irrigation well, diameter 24 inches, depth 65 feet. Measuring point, top of pump base, flush with land surface and 131.22 feet above datum. Water level Nov. 5, 1930, 29.42 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 5, 1930	101.80	Sept. 5, 1932	101.28	July 18, 1934 a/	92.62
Dec. 3	101.87	Oct. 3	101.16	Aug. 20	100.12
Jan. 7, 1931	101.84	Nov. 7	101.16	Sept. 20	100.03
Feb. 4	101.89	Dec. 5	101.17	Nov. 2	99.99
Mar. 4	101.90	Jan. 2, 1933	101.19	Dec. 20	100.01
Apr. 1	101.91	Feb. 6	101.19	Feb. 18, 1935	99.98
May 6	102.04	Mar. 6	101.20	Apr. 13	99.98
June 2	102.12	Apr. 3	101.22	May 30	99.98
July 7	101.92	May 1	101.23	July 1	100.51
Aug. 4	101.19	June 5	101.18	Aug. 7	97.85
Sept. 1	101.17	July 3	101.02	Sept. 9	99.98
Oct. 6	101.10	Aug. 7	100.91	Oct. 14	99.97
Nov. 2	101.10	Sept. 18	100.80	Nov. 18	99.98
Dec. 9	101.11	Oct. 18	100.78	Dec. 21	100.00
Jan. 4, 1932	101.14	Nov. 16	100.72	Jan. 10, 1936	100.00
Feb. 1	101.07	Dec. 18	100.72	Mar. 21	100.12
Mar. 7	101.42	Jan. 18, 1934	100.73	May 27	100.10
Apr. 4	101.45	Feb. 19	100.73	July 13	99.84
May 2	101.46	Mar. 19	100.70	Aug. 5	99.72
June 6	101.49	Apr. 17	100.70	20	99.72
July 4	101.74	May 16	100.63	Oct. 29	99.60
Aug. 1	101.43	June 19	100.44		

258. J. Weldon, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30, T. 10 N., R. 11 W. Drilled irrigation well, diameter 24 inches, depth 65 feet. Measuring point, top of 4- by 6-inch girder, 0.8 foot above land surface and 118.77 feet above datum. Water level Nov. 5, 1930, 16.81 feet below measuring point.

Nov. 5, 1930	101.96	July 4, 1932	102.16	Mar. 19, 1934	100.92
Dec. 3	101.97	Aug. 1	102.11	Apr. 17	100.86
Jan. 7, 1931	101.91	Sept. 5	102.14	May 16	100.81
Feb. 4	101.88	Oct. 3	102.06	June 19	100.71
Mar. 11	101.81	Nov. 7	101.95	Sept. 20	99.98
Apr. 1	101.80	Dec. 5	101.90	Nov. 2	100.10
May 6	101.87	Jan. 2, 1933	101.80	Dec. 21	100.01
June 2	102.23	Feb. 6	101.68	Feb. 18, 1935	99.94
July 7	102.26	Mar. 6	101.62	Apr. 13	99.91
Aug. 4	a/ 83.27	Apr. 3	101.57	May 30	99.93
Sept. 1	101.57	May 1	101.52	July 8	101.27
Oct. 6	101.65	June 5	101.69	Aug. 7	a/
Nov. 2	101.59	July 3	101.58	Sept. 9	101.13
Dec. 9	101.52	Aug. 7	a/ 94.13	Oct. 14	101.23
Jan. 4, 1932	101.45	Sept. 18	101.33	Nov. 18	101.33
Feb. 1	101.40	Oct. 18	101.27	Dec. 21	101.22
Mar. 7	101.52	Nov. 16	101.20	Jan. 10, 1936	101.18
Apr. 4	101.63	Dec. 18	101.11	Mar. 21	101.10
May 2	101.69	Jan. 18, 1934	100.99	May 27	100.97
June 6	101.70	Feb. 19	100.99	Oct. 29	100.11

259. J. Kipp, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 9 N., R. 12 W. Drilled irrigation well, diameter 24 inches, depth 46.3 feet. Measuring point, top of casing, flush with land surface and 106.73 feet above datum. Water level Nov. 5, 1930, 5.54 feet below measuring point.

Nov. 5, 1930	101.19	Sept. 1, 1931	100.28	July 4, 1932	102.33
Dec. 3	101.57	Oct. 6	100.49	Aug. 1	101.41
Jan. 7, 1931	101.87	Nov. 2	100.57	Sept. 5	100.83
Feb. 4	102.36	Dec. 9	100.79	Oct. 3	100.69
Mar. 4	102.85	Jan. 4, 1932	101.06	Nov. 7	100.92
Apr. 1	103.46	Feb. 1	101.39	Dec. 5	101.12
May 6	104.26	Mar. 7	103.34	Jan. 2, 1933	101.27
June 2	102.51	Apr. 4	102.85	Feb. 6	101.45
July 7	101.48	May 2	102.70	Mar. 6	101.60
Aug. 4	100.83	June 6	102.36	Apr. 3	101.85

a/ Pumping.

Hall County--Continued

259. J. Kipp--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 1, 1933	102.62	Apr. 17, 1934	101.61	July 1, 1935	103.84
June 5	102.11	May 16	101.21	Sept. 9	101.10
July 3	101.13	June 19	100.71	Oct. 14	100.73
Aug. 7	100.62	July 18	100.15	Nov. 18	100.92
Sept. 18	100.16	Aug. 20	99.47	Dec. 21	101.11
Oct. 18	100.39	Sept. 20	98.95	Jan. 10, 1936	101.19
Nov. 16	100.65	Nov. 2	99.69	Mar. 21	101.79
Dec. 18	100.91	Dec. 21	99.96	May 27	101.72
Jan. 18, 1934	101.10	Feb. 18, 1935	100.29	Aug. 5	99.24
Feb. 19	101.33	Apr. 13	100.68	20	a/ 86.13
Mar. 19	101.63	May 30	101.66	Oct. 29	99.58

260. S. Spahr, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 9 N., R. 12 W. Drilled irrigation well, diameter 24 inches, depth 63 feet. Measuring point, top of casing, 0.1 foot above land surface and 122.05 feet above datum. Water level Nov. 5, 1930, 20.12 feet below measuring point.

Nov. 5, 1930	101.93	Sept. 5, 1932	101.96	July 18, 1934	100.06
Dec. 3	101.95	Oct. 3	101.68	Aug. 20	99.88
Jan. 7, 1931	101.92	Nov. 7	101.56	Sept. 20	99.83
Feb. 4	101.89	Dec. 5	101.55	Nov. 2	99.90
Mar. 4	101.94	Jan. 2, 1933	101.52	Dec. 21	99.98
Apr. 1	101.97	Feb. 6	101.49	Feb. 18, 1935	100.09
May 6	102.28	Mar. 6	101.48	Apr. 13	100.22
June 2	102.71	Apr. 3	101.54	May 30	100.61
July 7	102.35	May 1	101.66	July 1	102.58
Aug. 4	a/ 95.36	June 5	101.67	Aug. 7	101.98
Sept. 1	101.20	July 3	101.33	Sept. 9	101.61
Oct. 6	101.24	Aug. 7	101.17	Oct. 14	101.35
Nov. 2	101.19	Sept. 18	101.40	Nov. 18	101.27
Dec. 9	101.21	Oct. 18	101.00	Dec. 21	101.21
Jan. 4, 1932	101.22	Nov. 16	101.39	Jan. 10, 1936	101.19
Feb. 1	101.25	Dec. 18	101.01	Mar. 21	101.35
Mar. 7	102.11	Jan. 18, 1934	101.03	May 27	101.32
Apr. 4	102.24	Feb. 19	101.08	July 13	101.00
May 2	102.13	Mar. 19	101.14	Aug. 5	100.75
June 6	102.06	Apr. 17	101.11	20	100.71
July 4	103.09	May 16	100.94	Oct. 29	100.31
Aug. 1	102.37	June 19	100.66		

261. J. Barron, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 10 N., R. 12 W. Drilled irrigation well, diameter 24 inches, depth 63 feet. Measuring point, top of casing, 1.0 foot above land surface and 126.18 feet above datum. Water level Nov. 5, 1930, 24.87 feet below measuring point.

Nov. 5, 1930	101.31	Sept. 5, 1932	101.35	June 19, 1934	100.53
Dec. 3	101.34	Oct. 3	101.35	Aug. 20	100.73
Jan. 7, 1931	101.35	Nov. 7	101.32	Sept. 20	99.87
Feb. 4	101.32	Dec. 5	101.30	Nov. 3	100.09
Mar. 4	101.32	Jan. 2, 1933	101.24	Dec. 21	100.01
Apr. 1	101.28	Feb. 6	101.21	Feb. 18, 1935	99.94
May 6	101.28	Mar. 6	101.15	Apr. 13	99.91
June 2	101.33	Apr. 3	101.14	May 30	99.86
July 7	101.30	May 1	101.12	July 1	101.15
Aug. 4	99.74	June 5	101.20	Sept. 9	101.19
Sept. 1	100.76	July 3	101.11	Oct. 14	101.16
Oct. 6	100.85	Aug. 7	101.10	Nov. 18	101.18
Nov. 2	100.87	Sept. 18	101.04	Dec. 21	100.97
Dec. 9	100.85	Oct. 18	100.99	Jan. 10, 1936	100.91
Jan. 4, 1932	100.84	Nov. 16	100.92	Mar. 21	100.50
Feb. 1	100.83	Dec. 18	100.83	May 27	100.67
Mar. 7	100.91	Jan. 18, 1934	100.77	July 13	100.60
Apr. 4	101.00	Feb. 19	100.73	Aug. 5	99.67
May 2	101.02	Mar. 19	100.69	20	99.67
June 6	101.03	Apr. 17	100.64	Oct. 29	99.84
July 4	101.40	May 16	100.60		

a/ Pumping.

Hamilton County

158. O. Swedberg, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 11 N., R. 6 W. Drilled irrigation well, diameter 24 inches, depth 194 feet. Measuring point, bottom edge of discharge pipe, 2.5 feet above land surface and 192.85 feet above datum. Water level Sept. 29, 1934, 93.04 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 29, 1934	99.81	Aug. 26, 1935	99.82	Jan. 27, 1936	99.69
Jan. 24, 1935	100.05	Sept. 27	99.75	Apr. 5	99.69
Mar. 16	99.77	Oct. 31	99.68	June 15	99.68
May 15	99.88	Dec. 5	99.88	Aug. 13	99.43
June 30	100.03	Jan. 8, 1936	99.92	Dec. 15	99.49

159. F. Steinmeyer, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 9 N., R. 8 W. Drilled irrigation well, diameter 24 inches, depth 120 feet. Measuring point, bottom edge of discharge pipe, 3.6 feet above land surface and 182.62 feet above datum. Water level Oct. 1, 1934, 82.58 feet below measuring point.

Oct. 1, 1934	100.04	July 23, 1935	99.84	Jan. 27, 1936	99.75
Dec. 1	99.99	Aug. 26	99.79	Apr. 4	99.75
Jan. 22, 1935	100.00	Sept. 27	99.75	June 15	99.74
Mar. 14	100.04	Oct. 31	99.57	Aug. 13	99.47
May 13	99.79	Dec. 5	99.75	22	99.86
June 27	99.91	Jan. 7, 1936	99.76		

160. R. Phillips, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 9 N., R. 8 W. Drilled well, diameter 5 inches, depth 66.6 feet. Measuring point, top of casing, 1.8 feet above land surface and 156.78 feet above datum. Water level Oct. 1, 1934, 56.26 feet below measuring point.

Oct. 1, 1934	100.52	July 23, 1935	99.95	Jan. 27, 1936	99.91
Dec. 1	100.03	Aug. 26	99.95	Apr. 4	99.57
Jan. 22, 1935	99.98	Sept. 27	99.96	June 15	99.14
Mar. 14	100.07	Oct. 30	100.60	Aug. 13	98.94
May 13	99.29	Dec. 5	100.28	22	99.03
June 27	100.09	Jan. 7, 1936	100.06		

173. T. Wild, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 9 N., R. 6 W. Drilled irrigation well, diameter 24 inches, depth 86.9 feet. Measuring point, top of steel girder, 0.5 foot above land surface and 141.52 feet above datum. Water level Oct. 6, 1934, 41.92 feet below measuring point.

Oct. 6, 1934	99.60	July 24, 1935	101.00	Jan. 27, 1936	100.67
Dec. 1	99.93	Aug. 27	100.55	Apr. 4	100.82
Jan. 22, 1935	100.05	Sept. 27	100.60	June 15	100.54
Mar. 14	100.22	Oct. 31	100.62	Aug. 13	99.84
May 13	100.81	Dec. 5	100.69	22	99.43
June 27	101.52	Jan. 7, 1936	100.67		

330. H. Lock, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 13 N., R. 6 W. Drilled irrigation well, diameter 24 inches, depth 61 feet. Measuring point, top of casing, 0.5 foot above land surface and 111.43 feet above datum. Water level Jan. 24, 1935, 11.22 feet below measuring point.

Jan. 24, 1935	100.21	Sept. 27, 1935	99.92	Apr. 5, 1936	101.11
Mar. 16	100.66	Oct. 31	99.92	June 15	100.67
May 15	100.72	Dec. 5	100.39	Aug. 13	99.54
June 30	102.32	Jan. 8, 1936	100.56	Sept. 22	99.30
July 24	100.90	27	100.66	Dec. 15	99.34
Aug. 26	100.00				

Harlan County

155. C. Feese, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 2 N., R. 18 W. Drilled irrigation well, diameter 48 inches, depth 26.7 feet. Measuring point, top of concrete curb, 0.5 foot above land surface and 114.74 feet above datum. Water level Sept. 27, 1934, 14.91 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 27, 1934	99.83	July 22, 1935	102.97	Jan. 25, 1936	102.12
Nov. 26	99.90	Aug. 24	102.52	Apr. 4	101.86
Jan. 21, 1935	100.06	Sept. 26	103.10	June 13	102.35
Mar. 12	100.20	Oct. 29	102.78	Aug. 11	101.57
May 11	100.21	Dec. 3	102.40	Sept. 20	101.22
June 21	101.84	Jan. 6, 1936	102.24	Dec. 11	100.83

222. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 3 N., R. 17 W. Driven well, diameter 1 inch, depth 32 feet. Measuring point, top of pipe, 2.2 feet below general land surface and 118.16 feet above datum. Water level Nov. 1, 1934, 18.28 feet below measuring point.

Nov. 1, 1934	99.88	Aug. 24, 1935	100.12	Apr. 4, 1936	100.13
Jan. 21, 1935	100.04	Sept. 26	100.20	June 13	100.15
Mar. 12	100.09	Oct. 29	100.18	Aug. 11	99.76
May 11	100.10	Dec. 4	100.16	Sept. 20	99.71
June 21	100.13	Jan. 6, 1936	100.14	Dec. 11	99.92
July 22	100.00	25	100.14		

329. G. Remke, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 21, T. 3 N., R. 17 W. Drilled irrigation well, diameter 48 inches, depth 57.8 feet. Measuring point, top of concrete curb, 1.1 feet above land surface and 153.00 feet above datum. Water level Jan. 21, 1935, 53.01 feet below measuring point.

Jan. 21, 1935	99.99	Aug. 24, 1935	99.91	Apr. 4, 1936	99.96
Mar. 12	99.99	Sept. 26	100.02	June 13	99.99
May 11	99.98	Oct. 29	100.02	Aug. 11	99.89
June 21	99.99	Dec. 4	99.98	Sept. 20	99.85
July 22	100.00	Jan. 6, 1936	99.97	Dec. 11	99.85

389. H. McArthur, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 2 N., R. 18 W. Drilled well, diameter 4 inches, depth 136 feet. Measuring point, top of casing, 0.9 foot above land surface and 187.03 feet above datum. Water level Dec. 4, 1935, 87.17 feet below measuring point.

Dec. 4, 1935	99.86	Apr. 4, 1936	100.02	Sept. 20, 1936	99.82
Jan. 6, 1936	99.96	June 13	100.02	Dec. 11	99.81
25	99.98	Aug. 11	99.87		

Hayes County

141. E. Joy, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 25, T. 5 N., R. 32 W. Drilled well, diameter 4 inches, depth 51.7 feet. Measuring point, top of casing, flush with land surface and 144.27 feet above datum. Water level Sept. 7, 1934, 44.25 feet below measuring point.

Sept. 7, 1934	100.02	Aug. 22, 1935	100.89	Apr. 2, 1936	100.79
Nov. 22	100.01	Sept. 25	101.00	June 12	101.16
Jan. 12, 1935	100.00	Oct. 28	100.93	Aug. 10	101.18
Mar. 11	99.95	Dec. 2	100.96	Sept. 18	101.08
May 1	99.91	Jan. 4, 1936	100.98	Dec. 8	100.82
July 20	100.92	24	100.93		

142. Laird & Ward, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 7 N., R. 34 W. Drilled well, diameter 4 inches, depth 265.3 feet. Measuring point, top of casing, 1.0 foot above land surface and 354.36 feet above datum. Water level Nov. 22, 1934, 255.44 feet below measuring point.

Nov. 22, 1934	98.92	Aug. 22, 1935	100.10	Jan. 24, 1936	100.27
Jan. 12, 1935	100.30	Sept. 25	100.13	Apr. 2	99.87
Mar. 11	99.95	Oct. 28	100.41	Aug. 10	100.47
May 1	100.30	Dec. 2	99.98	Sept. 18	100.13
July 20	100.17	Jan. 4, 1936	100.63	Dec. 8	100.50

Hitchcock County

140. A. Nowka, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 26, T. 4 N., R. 32 W. Drilled well, diameter 4 inches, depth 204.4 feet. Measuring point, hole in side of casing, 0.4 foot above land surface and 273.78 feet above datum. Water level Nov. 22, 1934, 174.01 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 22, 1934	99.77	Aug. 22, 1935	99.39	Apr. 2, 1936	99.08
Jan. 12, 1935	100.07	Sept. 25	99.35	June 12	99.15
Mar. 11	99.77	Oct. 28	99.54	Aug. 10	99.45
May 1	99.63	Dec. 2	99.55	Sept. 18	99.29
June 21	99.25	Jan. 4, 1936	99.82	Dec. 8	99.22
July 20	99.50	24	99.63		

178. O. Brownfield, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 2 N., R. 35 W. Drilled irrigation well, diameter 16 inches, depth 46.6 feet. Measuring point, top of wooden platform, 0.3 foot above land surface and 121.76 feet above datum. Water level Sept. 24, 1934, 22.03 feet below measuring point.

Sept. 24, 1934	99.73	July 19, 1935	101.46	Jan. 23, 1936	100.32
Nov. 21	99.74	Aug. 22	100.76	Apr. 2	100.47
Jan. 11, 1935	100.05	Sept. 25	100.46	June 11	100.46
Mar. 9	101.28	Oct. 27	100.29	Aug. 9	100.07
Apr. 29	100.39	Dec. 1	100.23	Sept. 19	99.79
June 16	101.49	Jan. 3, 1936	100.27	Dec. 6	99.79

362. S. Lawrence, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 3 N., R. 33 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 26.9 feet. Measuring point, top of pipe, 1.5 feet above land surface and 112.37 feet above datum. Water level Oct. 28, 1935, 11.65 feet below measuring point.

Oct. 28, 1935	100.72	Jan. 24, 1936	100.67	Aug. 10, 1936	100.11
Dec. 1	100.53	Apr. 2	100.81	Sept. 19	99.78
Jan. 4, 1936	100.60	June 12	100.81	Dec. 6	99.92

Holt County

112. G. Shoemaker, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 14, T. 29 N., R. 12 W. Drilled well, diameter 6 inches, depth 32.5 feet. Measuring point, top of casing, 1.6 feet above land surface and 116.59 feet above datum. Water level Aug. 23, 1934, 16.34 feet below measuring point.

Aug. 23, 1934	100.25	July 13, 1935	102.39	Jan. 15, 1936	101.15
Nov. 8	100.11	Aug. 12	102.01	Mar. 25	101.50
Jan. 2, 1935	100.00	Sept. 13	101.72	May 31	101.60
Feb. 23	99.99	Oct. 18	101.50	July 17	101.34
Apr. 17	100.25	Nov. 22	101.33	Sept. 13	101.02
June 5	101.75	Dec. 24	101.23	Nov. 12	100.75

113. F. Juracek, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 29 N., R. 14 W. Drilled irrigation well, diameter 16 inches, depth 49.4 feet. Measuring point, top of wooden platform, 1.0 foot below land surface and 118.23 feet above datum. Water level Aug. 24, 1934, 18.42 feet below measuring point.

Aug. 24, 1934	99.81	Aug. 12, 1935	100.40	Mar. 25, 1936	100.25
Nov. 8	99.98	Sept. 13	100.15	May 31	100.71
Jan. 2, 1935	100.00	Oct. 18	100.04	July 18	100.25
Feb. 23	100.37	Nov. 22	100.03	Sept. 13	99.92
Apr. 17	100.12	Dec. 24	98.92	Nov. 19	100.00
June 5	101.14	Jan. 16, 1936	100.05		

203. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 27 N., R. 9 W. Driven well, diameter 1 inch, depth 16.5 feet. Measuring point, top of pipe, 1.1 feet above land surface and 109.45 feet above datum. Water level Dec. 31, 1934, 9.45 feet below measuring point.

Dec. 31, 1934	100.00	June 4, 1935	104.35	Sept. 12, 1935	99.34
Feb. 21, 1935	100.13	July 11	100.29	Oct. 17	99.46
Apr. 16	100.52	Aug. 9	99.45	Nov. 21	99.66

Holt County--Continued

203. University of Nebraska.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 23, 1935	99.80	May 30, 1936	100.92	Sept. 14, 1936	98.58
Jan. 12, 1936	100.08	July 16	98.85	Nov. 10	99.23
Mar. 24	100.30				

373. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 28 N., R. 14 W. Driven well, diameter 1 inch, depth 14 feet. Measuring point, top of pipe, 1.4 feet above land surface and 106.56 feet above datum. Water level Nov. 22, 1935, 6.65 feet below measuring point.

Nov. 22, 1935	99.91	Mar. 25, 1936	101.33	Sept. 13, 1936	100.08
Dec. 24	100.36	May 31	102.02	Nov. 19	99.73
Jan. 16, 1936	100.26	July 18	100.65		

374. L. Nessen, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 27 N., R. 14 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 9 feet. Measuring point, top of stake, 1.8 feet below land surface and 102.68 feet above datum. Water level on Nov. 22, 1935, 2.41 feet below measuring point.

Nov. 22, 1935	100.27	Mar. 25, 1936	99.83	Sept. 13, 1936	98.06
Dec. 24	100.09	May 31	100.53	Nov. 19	98.68
Jan. 16, 1936	99.49	July 18	98.65		

Hooker County

214. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 24 N., R. 35 W. Driven well, diameter 1 inch, depth 22.6 feet. Measuring point, top of pipe, 1.8 feet above land surface and 113.46 feet above datum. Water level Dec. 18, 1934, 13.34 feet below measuring point.

Dec. 18, 1934	100.12	Aug. 15, 1935	102.82	Mar. 27, 1936	98.87
Jan. 5, 1935	99.96	Sept. 16	101.55	June 3	102.10
Feb. 26	99.49	Oct. 23	100.68	July 21	99.84
Apr. 20	99.13	Nov. 26	100.13	Aug. 27	99.17
June 8	111.47	Dec. 30	99.69	Nov. 24	98.31
July 15	106.04	Jan. 18, 1936	99.48		

Howard County

46. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 14, T. 14 N., R. 10 W. Driven well, diameter 1 inch, depth 12 feet. Measuring point, top of pipe, 1.0 foot above land surface and 108.56 feet above datum. Water level Aug. 7, 1934, 8.85 feet below measuring point.

Aug. 7, 1934	99.71	July 10, 1935	101.44	Jan. 12, 1936	100.34
Nov. 6	99.63	Aug. 9	100.63	Mar. 24	100.88
Dec. 29	99.99	Sept. 11	100.21	May 29	100.90
Feb. 21, 1935	100.27	Oct. 16	99.99	July 16	100.21
Apr. 16	100.51	Nov. 20	100.11	Sept. 15	99.65
June 3	101.29	Dec. 23	100.25	Nov. 6	99.61

51. Placke estate, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 13 N., R. 9 W. Driven well, diameter 2 inches, depth 52.9 feet. Measuring point, top of pipe, 1.0 foot above land surface and 120.96 feet above datum. Water level Aug. 6, 1934, 20.45 feet below measuring point.

Aug. 6, 1934	100.51	July 8, 1935	101.05	Jan. 9, 1936	100.02
Nov. 2	100.10	Aug. 6	100.86	Mar. 21	100.25
Dec. 20	100.05	Sept. 9	100.46	May 27	100.29
Feb. 18, 1935	99.93	Oct. 14	100.21	July 13	99.96
Apr. 13	100.03	Nov. 18	100.09	Aug. 19	99.77
May 30	100.45	Dec. 21	100.02	Oct. 29	99.48

Howard County--Continued

59. M. Augustyn, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 16 N., R. 11 W. Drilled well, diameter 3 inches, depth 89.9 feet. Measuring point, top of casing, 0.5 foot above land surface and 165.80 feet above datum. Water level Aug. 11, 1934, 66.26 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 11, 1934	99.54	July 10, 1935	100.24	Jan. 12, 1936	99.82
Nov. 6	99.72	Aug. 9	99.74	Mar. 24	100.11
Dec. 29	99.98	Sept. 11	99.66	May 29	99.94
Feb. 21, 1935	100.57	Oct. 16	99.49	July 15	99.69
Apr. 16	100.16	Nov. 20	99.62	Sept. 15	99.27
June 11	100.18	Dec. 22	99.56	Nov. 6	99.43

98. O. Young, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 13 N., R. 12 W. Dug well, diameter 36 inches, depth 31 feet. Measuring point, top of iron plate, 0.2 foot above land surface and 128.34 feet above datum. Water level Aug. 7, 1934, 29.62 feet below measuring point.

Aug. 7, 1934	98.72	July 9, 1935	102.03	Jan. 11, 1936	100.75
Nov. 5	99.44	Aug. 8	101.18	Mar. 23	101.52
Dec. 28	99.97	Sept. 10	100.84	May 28	101.34
Feb. 20, 1935	100.39	Oct. 15	100.48	July 14	100.06
Apr. 15	100.81	Nov. 19	100.58	Sept. 15	99.01
June 10	101.72	Dec. 22	100.71	Nov. 4	99.30

346. University of Nebraska, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 15 N., R. 10 W. Driven well, diameter 1 inch, depth 17.2 feet. Measuring point, top of pipe, 0.8 foot above land surface and 106.55 feet above datum. Water level Oct. 16, 1935, stood 6.91 feet below measuring point.

Oct. 16, 1935	99.64	Jan. 12, 1936	100.41	July 16, 1936	99.57
Nov. 20	100.04	Mar. 24	102.02	Sept. 14	99.25
Dec. 23	100.28	May 29	101.15	Nov. 6	99.98

Jefferson County

226. C. Ellis, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 2 N., R. 4 E. Drilled well, diameter 8 inches, depth 35.4 feet. Measuring point, top of casing, 0.5 foot above land surface and 120.16 feet above datum. Water level Oct. 7, 1934, 19.93 feet below measuring point.

Oct. 7, 1934	100.23	July 25, 1935	106.12	Jan. 29, 1936	102.94
Dec. 4	100.08	Aug. 28	104.13	Apr. 6	103.67
Jan. 23, 1935	99.93	Oct. 1	104.66	June 16	104.04
Mar. 15	100.34	Nov. 1	103.73	Aug. 14	102.33
May 14	99.98	Dec. 7	103.69	Sept. 23	100.92
June 26	107.28	Jan. 9, 1936	103.28	Dec. 19	99.68

227. R. Garrett, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 1 N., R. 4 E. Drilled well, diameter 5 inches, depth 35.4 feet. Measuring point, top of iron plate, 0.9 foot above land surface and 131.82 feet above datum. Water level Oct. 7, 1934, 31.68 feet below measuring point.

Oct. 7, 1934	100.14	July 25, 1935	100.23	Jan. 29, 1936	100.13
Dec. 4	100.03	Aug. 28	100.16	Apr. 6	100.07
Jan. 23, 1935	99.97	Oct. 1	100.18	June 16	99.99
Mar. 15	100.89	Nov. 1	100.13	Aug. 14	99.87
May 14	100.66	Dec. 7	100.15	Sept. 23	99.81
June 26	101.29	Jan. 9, 1936	100.14	Dec. 19	99.73

228. A. Knispel, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 14, T. 3 N., R. 1 E. Dug well, diameter 36 inches, depth 37.6 feet. Measuring point, top of iron plate, 0.3 foot above land surface and 131.73 feet above datum. Water level Oct. 7, 1934, 31.44 feet below measuring point.

Oct. 7, 1934	100.29	July 25, 1935	100.07	Jan. 28, 1936	99.79
Dec. 3	100.09	Aug. 28	100.08	Apr. 6	99.66
Jan. 23, 1935	99.93	Oct. 1	100.02	June 16	99.53
Mar. 15	99.82	Nov. 1	99.94	Aug. 14	99.50
May 14	99.64	Dec. 7	99.89	Sept. 23	99.36
June 26	99.90	Jan. 9, 1936	99.83	Dec. 18	99.20

Jefferson County--Continued

229. E. Simpkins, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 4 N., R. 2 E. Drilled well, diameter 4 inches, depth 150.3 feet. Measuring point, top of casing, 1.3 feet above land surface and 245.95 feet above datum. Water level Oct. 7, 1934, 145.41 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 7, 1934	100.54	July 25, 1935	100.26	Jan. 29, 1936	100.04
Dec. 3	100.36	Aug. 29	100.21	June 16	100.61
Jan. 23, 1935	99.72	Oct. 1	100.15	Aug. 14	100.40
Mar. 15	101.22	Nov. 1	100.04	Sept. 23	100.07
May 14	100.30	Dec. 7	100.55	Dec. 18	100.36
June 26	100.34	Jan. 9, 1936	100.43		

Johnson County

2. L. Miller, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 26, T. 6 N., R. 9 E. Bored well, diameter 12 inches, depth 37.3 feet. Measuring point, top of casing, flush with land surface and 133.23 feet above datum. Water level July 14, 1934, 33.01 feet below measuring point.

July 14, 1934	100.22	July 30, 1935	99.97	Mar. 16, 1936	100.04
Oct. 22	100.19	Sept. 3	99.95	May 19	99.65
Dec. 11	99.99	Oct. 5	99.82	July 6	99.69
Feb. 5, 1935	100.00	Nov. 11	99.97	27	99.58
Apr. 5	100.02	Dec. 16	99.90	Aug. 24	99.58
May 23	100.16	Jan. 3, 1936	99.63	Oct. 6	99.53
July 1	100.19				

3. E. Graf, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 25, T. 4 N., R. 11 E. Bored well, diameter 12 inches, depth 31.5 feet. Measuring point, top of casing, 1.0 foot above land surface and 121.55 feet above datum. Water level July 14, 1934, 21.29 feet below measuring point.

July 14, 1934	100.26	July 1, 1935	103.68	Jan. 3, 1936	101.34
Oct. 22	99.96	30	104.33	Mar. 16	102.76
Dec. 11	100.11	Sept. 3	102.14	May 19	103.39
Feb. 5, 1935	99.80	Oct. 5	101.33	July 6	102.80
Apr. 5	99.65	Nov. 11	101.34	28	101.90
May 23	100.15	Dec. 16	101.36	Aug. 24	101.08

Kearney County

181. E. Carlson, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 20, T. 6 N., R. 16 W. Drilled well, diameter 3 inches, depth to top of pump cylinder, 102.1 feet. Measuring point, hole in side of casing, 1.1 feet above land surface and 200.68 feet above datum. Water level Sept. 26, 1934, 100.98 feet below measuring point.

Sept. 26, 1934	99.70	June 20, 1935	99.78	Dec. 4, 1935	99.71
Nov. 27	99.94	July 23	99.61	Jan. 7, 1936	99.54
Jan. 21, 1935	100.04	Aug. 24	99.72	27	99.51
Mar. 13	99.66	Sept. 27	99.47	Sept. 21	99.63
May 12	99.67	Oct. 30	99.58	Dec. 11	99.42

266. H. Yensen, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 8 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 40 feet. Measuring point, top of pump base, flush with land surface and 110.32 feet above datum. Water level Nov. 4, 1930, 8.76 feet below measuring point.

Nov. 4, 1930	101.56	Oct. 6, 1931	100.44	Sept. 5, 1932	100.76
Dec. 3	101.92	Nov. 2	100.50	Oct. 3	100.56
Jan. 7, 1931	101.89	Dec. 9	100.89	Nov. 7	100.85
Feb. 4	101.93	Jan. 4, 1932	101.14	Dec. 5	101.10
Mar. 4	102.02	Feb. 1	101.42	Jan. 2, 1933	101.25
Apr. 1	102.11	Mar. 7	102.20	Feb. 6	101.52
May 6	102.34	Apr. 4	102.01	Mar. 6	101.63
June 3	102.00	May 2	101.85	Apr. 3	101.69
July 7	101.12	June 6	101.95	May 1	102.00
Aug. 4	100.41	July 4	102.21	June 5	101.86
Sept. 1	100.30	Aug. 1	101.25	July 3	100.81

Kearney County--Continued

266. H. Yensen.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 7, 1933	100.50	July 18, 1934 a/	90.07	Oct. 14, 1935	100.44
Sept. 18	100.45	Aug. 20 a/	88.72	Nov. 19	100.60
Oct. 18	100.67	Sept. 20	99.80	Dec. 21	100.88
Nov. 16	100.86	Nov. 3	99.76	Jan. 10, 1936	100.94
Dec. 18	101.12	Dec. 22	99.88	Mar. 23	101.32
Jan. 18, 1934	101.29	Feb. 19, 1935	100.60	May 27	101.32
Feb. 19	101.43	Apr. 13	100.86	July 13	100.43
Mar. 19	101.50	May 30	101.41	Aug. 5	100.07
Apr. 17	101.41	July 1	101.83	Oct. 20	99.95
May 16	a/ 91.02	Aug. 7	a/ 89.19	Oct. 29	99.75
June 19	101.41	Sept. 10	100.69		

Keith County

93. D. Thiessen, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 13 N., R. 35 W. Drilled well, diameter 6 inches, depth 18.1 feet. Measuring point, top of casing, 1.0 foot above land surface and 115.53 feet above datum. Water level Sept. 6, 1934, 16.03 feet below measuring point.

Sept. 6, 1934	99.50	July 17, 1935	100.36	Jan. 21, 1936	100.26
Nov. 15	99.72	Aug. 19	99.43	Mar. 30	100.56
Jan. 8, 1935	100.05	Sept. 18	100.05	June 7	100.19
Mar. 2	100.30	Oct. 25	99.55	Aug. 6	99.49
Apr. 24	100.33	Nov. 28	99.68	Sept. 17	99.24
June 13	102.13	Jan. 1, 1936	100.01	Nov. 28	99.47
July 2	101.88				

255. University of Nebraska, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 16 N., R. 38 W. Drilled well, diameter 2 inches, depth 42.3 feet. Measuring point, top of pipe, 2.5 feet above land surface and 113.50 feet above datum. Water level Dec. 5, 1934, 13.50 feet below measuring point.

Dec. 5, 1934	100.00	Aug. 19, 1935	100.08	Mar. 30, 1936	100.08
Jan. 8, 1935	100.00	Sept. 18	99.88	June 8	100.03
Mar. 2	100.16	Oct. 25	99.95	Aug. 7	99.72
Apr. 25	100.20	Nov. 28	100.04	Sept. 10	99.61
June 13	100.13	Jan. 1, 1936	100.08	Nov. 30	100.19
July 17	100.24	21	100.05		

348. E. Pueppke, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 13 N., R. 35 W. Drilled well, diameter 6 inches, depth 21.7 feet. Measuring point, top of casing, 0.2 foot above land surface and 108.50 feet above datum. Water level Aug. 9, 1935, 8.77 feet below measuring point.

Aug. 9, 1935	99.73	Sept. 23, 1935	99.31	Jan. 21, 1936	100.77
19	99.46	Oct. 7	99.58	Mar. 28	101.07
26	99.48	25	99.77	Aug. 6	100.58
Sept. 4	99.67	Nov. 28	100.03	Sept. 17	100.18
16	99.40	Jan. 1, 1936	100.33	Nov. 28	100.78

349. ---, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 12 N., R. 36 W. Drilled well, diameter 3 $\frac{1}{2}$ inches, depth 175.8 feet. Measuring point, top of wooden base, flush with land surface and 264.48 feet above datum. Water level July 23, 1935, 164.33 feet below measuring point.

July 23, 1935	100.15	Sept. 4, 1935	100.32	Jan. 1, 1936	100.11
29	100.29	16	100.24	21	100.19
Aug. 5	100.28	23	100.31	Mar. 30	99.94
12	100.14	Oct. 7	100.40	Sept. 17	100.52
19	100.33	25	100.36	Nov. 28	100.29
26	100.20	Nov. 28	100.07		

a/ Pumping.

Keith County--Continued

350. ---, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 13 N., R. 37 W. Drilled well, diameter 6 inches, depth 21.6 feet. Measuring point, top of casing, 1.4 feet above land surface and 116.18 feet above datum. Water level Aug. 15, 1935, 15.20 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 15, 1935	100.98	Sept. 23, 1935	100.43	Jan. 21, 1936	100.92
26	100.76	Oct. 7	100.27	Mar. 30	100.86
Sept. 4	100.66	25	100.19	Aug. 6	99.93
16	100.52	Jan. 1, 1936	100.59	Sept. 17	99.80

351. S. Hilliard, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 16, T. 13 N., R. 37 W. Drilled well, diameter 6 inches, depth 71 feet. Measuring point, top of iron plate, 0.7 foot above land surface and 159.36 feet above datum. Water level Aug. 9, 1935, 59.10 feet below measuring point.

Aug. 9, 1935	100.26	Oct. 7, 1935	99.99	Mar. 30, 1936	99.98
19	100.21	25	99.94	June 7	99.85
26	100.16	Nov. 28	99.89	Aug. 6	99.52
Sept. 4	100.16	Jan. 1, 1936	99.91	Sept. 17	99.35
16	100.11	21	99.95	Nov. 28	99.28
23	100.05				

352. University of Nebraska, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 30, T. 15 N., R. 38 W. Driven well, diameter 1 inch, depth 16.8 feet. Measuring point, top of pipe, 1.2 feet above land surface and 105.42 feet above datum. Water level Oct. 25, 1935, 6.02 feet below measuring point.

Oct. 25, 1935	99.40	Jan. 21, 1936	100.55	Aug. 7, 1936	98.94
Nov. 28	99.90	Mar. 30	101.22	Sept. 10	98.60
Jan. 1, 1936	100.33	June 8	100.72	Nov. 30	99.68

355. L. Anderson, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 12 N., R. 41 W. Drilled well, diameter 8 inches, depth 59 feet. Measuring point, top of casing, 0.8 foot above land surface and 150.26 feet above datum. Water level July 5, 1935, 49.78 feet below measuring point.

July 5, 1935	100.48	Sept. 4, 1935	101.09	Jan. 23, 1936	99.76
22	100.42	16	101.01	Apr. 1	98.77
29	100.61	23	100.99	June 11	100.81
Aug. 5	100.80	Oct. 7	100.91	Aug. 8	100.62
12	100.86	27	100.95	31	101.94
19	100.89	Nov. 30	100.95	Dec. 4	101.56
26	101.25	Jan. 3, 1936	100.23		

356. ---, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 11, T. 12 N., R. 41 W. Drilled well, diameter 3 $\frac{1}{2}$ inches, depth 181.3 feet. Measuring point, top of casing, 1.2 feet above land surface and 248.00 feet above datum. Water level July 19, 1935, 147.54 feet below measuring point.

July 19, 1935	100.46	Sept. 4, 1935	100.23	Jan. 3, 1936	100.23
22	100.54	16	100.15	23	100.16
29	100.45	23	100.07	Apr. 1	99.91
Aug. 5	100.41	Oct. 7	100.28	June 11	100.32
12	100.18	27	100.50	Aug. 8	100.23
19	100.19	Nov. 30	100.48	31	99.82
26	100.02				

357. O. Beal, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 22, T. 13 N., R. 40 W. Drilled well, diameter 6 inches, depth 13 feet. Measuring point, top of concrete base, 0.3 foot above land surface and 107.64 feet above datum. Water level July 8, 1935, 6.75 feet below measuring point.

July 8, 1935	100.89	Sept. 4, 1935	99.28	Jan. 23, 1936	100.36
22	100.15	16	99.13	Apr. 1	100.35
29	99.83	23	99.08	June 11	100.99
Aug. 5	99.64	Oct. 7	99.17	Aug. 8	99.89
12	99.42	27	99.56	31	99.76
19	99.26	Nov. 30	100.21	Dec. 4	100.13
26	99.37	Jan. 3, 1936	100.34		

Keith County--Continued

358. G. McGinley, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T. 13 N., R. 39 W. Drilled well, diameter 4 inches, depth 53.7 feet. Measuring point, top of casing, 3.7 feet above land surface and 144.79 feet above datum. Water level July 10, 1935, 45.32 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 10, 1935	99.47	Sept. 4, 1935	99.33	Jan. 3, 1936	100.24
22	99.37	16	99.22	23	100.03
29	99.31	23	99.12	Apr. 1	99.40
Aug. 5	99.23	Oct. 7	99.20	June 11	99.42
12	99.28	27	101.13	Aug. 31	98.89
19	99.41	Nov. 30	100.69	Dec. 5	99.25
26	99.39				

359. ---, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 9, T. 13 N., R. 39 W. Drilled irrigation well, diameter 24 inches, depth 30.7 feet. Measuring point, top of casing, 1.0 foot above land surface and 106.55 feet above datum. Water level July 17, 1935, 5.59 feet below measuring point.

July 17, 1935	100.96	Oct. 27, 1935	99.71	Apr. 1, 1936	100.51
22	100.57	Nov. 30	100.00	June 11	100.15
29	100.54	Jan. 3, 1936	100.34	Aug. 8	a/
Sept. 23	99.09	23	100.65	Dec. 4	99.66
Oct. 7	99.55				

360. G. Peters estate, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 13 N., R. 39 W. Drilled well, diameter 3 $\frac{1}{2}$ inches, depth 199.3 feet. Measuring point, top of casing, 1.6 feet above land surface and 268.52 feet above datum. Water level July 15, 1935, 168.95 feet below measuring point.

July 15, 1935	99.57	Aug. 26, 1935	99.57	Nov. 30, 1935	99.75
22	99.78	Sept. 4	99.65	Jan. 3, 1936	100.13
29	99.70	16	99.69	23	99.87
Aug. 5	99.86	23	99.72	Aug. 31	99.82
12	99.61	Oct. 7	99.65	Dec. 5	99.93
19	99.84	27	99.76		

Keyapaha County

76. N. Wentworth, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T. 32 N., R. 20 W. Dug well, diameter 12 inches, depth 33.3 feet. Measuring point, top of wooden platform, 0.7 foot above land surface and 131.90 feet above datum. Water level Aug. 25, 1934, 31.20 feet below measuring point.

Aug. 25, 1934	100.70	July 13, 1935	100.25	Jan. 16, 1936	99.30
Nov. 8	100.16	Aug. 12	99.72	Mar. 25	100.24
Jan. 2, 1935	99.99	Sept. 13	99.67	May 31	101.03
Feb. 23	99.78	Oct. 18	99.23	July 18	100.20
Apr. 17	99.80	Nov. 22	99.33	Sept. 13	99.11
June 5	100.44	Dec. 24	99.35	Nov. 19	98.87

375. University of Nebraska, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 32 N., R. 20 W. Driven well, diameter 1 inch, depth 9 feet. Measuring point, top of pipe, 1.2 feet above land surface and 103.73 feet above datum. Water level Nov. 22, 1935, 3.52 feet below measuring point.

Nov. 22, 1935	100.21	Mar. 25, 1936	100.78	Sept. 13, 1936	99.53
Dec. 24	100.32	May 31	100.18	Nov. 19	100.34
Jan. 16, 1936	100.34	July 18	99.20		

Kimball County

88. W. Settlementire, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 15 N., R. 57 W. Drilled well, diameter 4 inches. Measuring point, top of casing, 0.5 foot above land surface and 134.65 feet above datum. Water level Aug. 31, 1934, 34.62 feet below measuring point.

Aug. 31, 1934	100.03	July 18, 1935	100.68	Jan. 22, 1936	100.16
Nov. 19	99.99	Aug. 20	100.37	Mar. 31	100.28
Jan. 10, 1935	100.00	Sept. 19	100.01	June 9	100.27
Mar. 5	100.07	Oct. 26	100.25	Aug. 8	100.12
Apr. 27	100.18	Nov. 29	100.23	29	100.06
June 15	100.78	Jan. 2, 1936	100.21	Dec. 3	100.10

Kimball County--Continued

89. H. McGowan, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 12, T. 16 N., R. 54 W. Drilled well, diameter 4 inches, depth 267.6 feet. Measuring point, top of casing, 1.9 feet above land surface and 355.49 feet above datum. Water level Aug. 31, 1934, 255.61 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 31, 1934	99.88	July 18, 1935	99.98	Jan. 2, 1936	100.30
Nov. 19	100.22	Aug. 20	99.79	22	99.79
Jan. 10, 1935	99.95	Sept. 19	99.91	Apr. 1	99.80
Mar. 5	100.00	Oct. 26	99.99	Aug. 29	99.87
June 15	100.13	Nov. 29	99.71	Dec. 3	100.08

327. Kimball Irrigation District, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 15 N., R. 55 W. Drilled well, diameter 4 inches, depth 114.4 feet. Measuring point, top of $\frac{1}{4}$ -inch pipe in cover, 0.8 foot above land surface and 193.93 feet above datum. Water level Jan. 10, 1935, 93.98 feet below measuring point.

Jan. 10, 1935	99.95	Sept. 19, 1935	100.65	Mar. 31, 1936	100.64
Mar. 5	99.68	Oct. 26	100.69	June 9	100.35
Apr. 27	99.90	Nov. 29	100.63	Aug. 8	100.46
June 15	100.74	Jan. 2, 1936	100.91	29	100.48
July 18	100.67	22	100.81	Dec. 3	100.31
Aug. 20	100.67				

344. M. Tomich, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33, T. 15 N., R. 57 W. Drilled irrigation well, diameter 24 inches, depth 66.7 feet. Measuring point, hole in pump base, 1.3 feet above land surface and 124.30 feet above datum. Water level Nov. 29, 1935, 23.77 feet below measuring point.

Nov. 29, 1935	100.53	Jan. 22, 1936	100.60	Dec. 3, 1936	100.36
Jan. 2, 1936	100.59	Mar. 31	100.85		

394. H. Meier, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 26, T. 15 N., R. 55 W. Drilled irrigation well, diameter 20 inches, depth 120 feet. Measuring point, top of casing, 0.7 foot above land surface and 140.04 feet above datum. Water level Jan. 2, 1936, 39.82 feet above measuring point.

Jan. 2, 1936	100.22	June 9, 1936	99.65	Aug. 29, 1936	99.31
22	100.00	Aug. 8	99.36	Dec. 3	100.03
Apr. 1	99.52				

Knox County

67. W. Krohn, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 30 N., R. 3 W. Dug well, diameter 36 inches, depth 25.6 feet. Measuring point, top of iron plate, 0.8 foot above land surface and 122.27 feet above datum. Water level Aug. 15, 1934, 23.25 feet below measuring point.

Aug. 15, 1934	99.02	July 6, 1935	100.74	Jan. 8, 1936	99.42
Oct. 31	100.01	Aug. 5	100.05	Mar. 20	100.60
Dec. 18	99.96	Sept. 7	99.66	May 25	100.53
Feb. 13, 1935	100.22	Oct. 11	99.24	July 11	99.14
Apr. 11	100.57	Nov. 16	99.30	Aug. 3	98.41
May 28	101.19	Dec. 20	99.42	Oct. 26	98.77

71. F. Stingley, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 29 N., R. 5 W. Drilled well, diameter 6 inches, depth 23.8 feet. Measuring point, top of casing, 0.5 foot above land surface and 120.07 feet above datum. Water level Aug. 23, 1934, 20.15 feet below measuring point.

Aug. 23, 1934	99.92	July 11, 1935	100.95	Jan. 15, 1936	100.35
Nov. 7	99.78	Aug. 10	100.76	Mar. 25	100.68
Dec. 31	100.00	Sept. 12	100.44	May 30	100.82
Feb. 22, 1935	100.19	Oct. 18	100.22	July 17	100.37
Apr. 17	100.34	Nov. 21	100.26	Sept. 14	99.81
June 4	100.66	Dec. 24	100.33	Nov. 11	99.78

Knox County--Continued

335. University of Nebraska, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 30, T. 33 N., R. 7 W. Driven well, diameter 1 inch, depth 17 feet. Measuring point, top of pipe, 1.4 feet above land surface and 110.29 feet above datum. Water level Dec. 24, 1935, 9.95 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 24, 1935	100.34	May 30, 1936	100.03	Sept. 13, 1936	98.52
Jan. 15, 1936	100.30	July 17	98.59	Nov. 11	97.86
Mar. 25	100.34				

336. W. MacGraw, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 32 N., R. 6 W. Driven well, diameter 1 inch, depth 22.9 feet. Measuring point, top of pipe, 0.8 foot above land surface and 116.92 feet above datum. Water level Aug. 10, 1935, 13.61 feet below measuring point.

Aug. 10, 1935	103.31	Dec. 24, 1935	100.48	July 17, 1936	102.88
Sept. 12	101.37	Jan. 15, 1936	100.91	Sept. 13	100.71
Oct. 18	100.29	Mar. 25	103.49	Nov. 11	100.58
Nov. 21	99.95	May 30	103.31		

370. Lunberg Bros., SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 29 N., R. 2 W. Drilled well, diameter 30 inches, depth 14.2 feet. Measuring point, top of iron plate, 1.4 feet above land surface and 109.36 feet above datum. Water level Nov. 16, 1935, 8.72 feet below measuring point.

Nov. 16, 1935	100.64	Mar. 20, 1936	102.58	Aug. 3, 1936	99.82
Dec. 20	100.41	May 25	103.19	Oct. 26	100.87
Jan. 8, 1936	100.28	July 11	100.63		

Lancaster County

1. Mrs. Burling, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 7 N., R. 7 E. Bored well, diameter 8 inches, depth 39.1 feet. Measuring point, top of casing, 1.2 feet above land surface and 129.30 feet above datum. Water level July 18, 1934, 29.17 feet below measuring point.

July 18, 1934	100.13	July 1, 1935	100.20	Jan. 3, 1936	100.13
Oct. 22	100.10	30	100.09	Mar. 16	99.78
Dec. 11	100.01	Sept. 3	100.06	May 19	99.80
Feb. 5, 1935	99.99	Oct. 5	99.78	July 27	99.65
Apr. 5	99.98	Nov. 11	99.77	Aug. 24	99.75
May 23	99.96	Dec. 16	99.85	Oct. 6	99.60

13. Miss Brady, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 9 N., R. 5 E. Dug well, diameter 36 inches, depth 27.7 feet. Measuring point, top of iron plate, 0.3 foot above land surface and 123.42 feet above datum. Water level July 23, 1934, 22.86 feet below measuring point.

July 23, 1934	100.56	May 24, 1935	100.49	Nov. 11, 1935	99.94
Oct. 25	100.42	July 2	101.98	Dec. 16	98.87
Dec. 13	99.95	31	100.41	Jan. 4, 1936	94.74
Feb. 9, 1935	100.11	Sept. 3	100.53	July 27	95.01
Apr. 8	100.04	Oct. 5	100.31	Oct. 6	97.36

14. W. Brightenburg, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 6, T. 11 N., R. 6 E. Bored well, diameter 8 inches, depth 38 feet. Measuring point, hole in wooden platform, 0.5 foot above land surface and 120.74 feet above datum. Water level July 23, 1934, 20.66 feet below measuring point.

July 23, 1934	100.08	July 2, 1935	101.57	Jan. 4, 1936	101.50
Oct. 25	99.66	31	102.78	Mar. 19	102.91
Dec. 13	99.92	Sept. 4	101.83	May 20	102.39
Feb. 9, 1935	100.16	Oct. 8	101.38	July 7	100.66
Apr. 8	100.38	Nov. 13	101.40	29	99.82
May 24	100.81	Dec. 17	101.57	Oct. 16	99.05

Lancaster County--Continued

366. H. Hollan, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T. 9 N., R. 7 E. Dug well, diameter 42 inches, depth 22.6 feet. Measuring point, top of concrete platform, 1.3 feet above land surface and 110.76 feet above datum. Water level Nov. 13, 1935, 10.89 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 13, 1935	99.87	Mar. 16, 1936	101.31	July 27, 1936	98.98
Dec. 16	100.23	May 19	102.65	Aug. 24	98.41
Jan. 4, 1936	100.36	July 6	100.76	Oct. 14	98.13

367. F. Jappert, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 10 N., R. 6 E., in basement of house. Bored well, diameter 6 inches, depth 40.5 feet. Measuring point, top of casing, 3.2 feet below land surface and 121.78 feet above datum. Water level Nov. 13, 1935, 21.29 feet below measuring point.

Nov. 13, 1935	100.49	Mar. 16, 1936	101.02	July 29, 1936	100.78
Dec. 17	100.56	May 19	100.70	Oct. 16	100.68
Jan. 5, 1936	100.60	July 7	100.89		

Lincoln County

131. Great Western Sugar Co., NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 14 N., R. 32 W. Drilled irrigation well, diameter 14 inches, depth 37.6 feet. Measuring point, top of concrete pit wall, 0.5 foot above land surface and 111.73 feet above datum. Water level Sept. 5, 1934, 12.30 feet below measuring point.

Sept. 5, 1934	99.43	July 17, 1935	102.46	Jan. 21, 1936	99.84
Nov. 15	100.92	Aug. 19	102.08	Feb. 24	99.39
Jan. 8, 1935	99.84	Sept. 18	102.92	Mar. 30	99.29
Mar. 2	99.14	Oct. 25	101.98	June 7	100.53
Apr. 24	100.12	Nov. 28	100.96	Sept. 17	102.76
June 13	101.68	Jan. 1, 1936	100.16	Nov. 28	100.64
July 2	101.45				

133. R. Larson, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 10 N., R. 29 W. Drilled well, diameter 4 inches, depth 244.5 feet. Measuring point, top of casing, 0.5 foot above land surface and 329.17 feet above datum. Water level Nov. 23, 1934, 229.15 feet below measuring point.

Nov. 23, 1934	100.02	June 18, 1935	100.22	Oct. 28, 1935	100.48
Jan. 14, 1935	99.99	July 20	100.30	Jan. 4, 1936	100.90
Mar. 11	100.10	Aug. 22	100.23	24	100.36
May 1	100.57	Sept. 25	100.14		

134. G. Roethemeyer, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T. 9 N., R. 29 W. Drilled well, diameter 6 inches, depth 285.8 feet. Measuring point, top of casing, 1.7 feet above land surface and 373.67 feet above datum. Water level Nov. 23, 1934, 273.68 feet below measuring point.

Nov. 23, 1934	99.99	July 20, 1935	100.33	Jan. 4, 1936	100.83
Jan. 14, 1935	100.00	Aug. 22	100.20	24	100.22
Mar. 11	100.11	Sept. 25	100.13	Aug. 10	100.48
May 1	100.56	Oct. 28	100.51	Sept. 18	100.19
June 18	100.26	Dec. 2	100.19	Dec. 8	100.54

143. G. Connealy, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 10 N., R. 34 W. Drilled well, diameter 3 inches, depth 178.2 feet. Measuring point, top of casing, 1.0 foot above land surface and 264.06 feet above datum. Water level Nov. 22, 1934, 164.25 feet below measuring point.

Nov. 22, 1934	99.81	Aug. 22, 1935	99.94	Jan. 24, 1936	100.18
Jan. 12, 1935	100.06	Sept. 25	99.97	Apr. 2	99.86
Mar. 11	99.83	Oct. 28	100.37	Aug. 10	100.45
May 1	100.18	Dec. 2	99.96	Sept. 18	100.19
June 18	99.89	Jan. 4, 1936	100.58	Dec. 8	100.43
July 20	100.13				

Lincoln County--Continued

144. J. Fristo, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 10 N., R. 32 W. Drilled well, diameter 4 inches, depth 209.6 feet. Measuring point, hole in casing cover, 0.3 foot above land surface and 247.88 feet above datum. Water level Nov. 22, 1934, 148.05 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 22, 1934	99.83	July 20, 1935	99.92	Jan. 4, 1936	100.53
Jan. 12, 1935	100.05	Aug. 23	99.97	24	100.26
Mar. 11	99.90	Sept. 25	100.03	Apr. 2	100.16
May 1	100.10	Oct. 28	100.20	Aug. 10	100.33
June 18	100.06	Dec. 2	100.01	Dec. 8	100.57

241. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 12 N., R. 27 W. Driven well, diameter 1 inch, depth 18.3 feet. Measuring point, top of pipe, 1.7 feet above land surface and 106.91 feet above datum. Water level Dec. 8, 1934, 7.05 feet below measuring point.

Dec. 8, 1934	99.86	July 16, 1935	100.74	Jan. 20, 1936	100.22
Jan. 8, 1935	100.04	Aug. 17	98.70	Mar. 28	100.13
Mar. 2	100.22	Sept. 17	98.96	June 6	101.12
Apr. 24	100.20	Oct. 24	99.56	July 23	98.26
June 13	102.11	Nov. 27	99.97	Sept. 16	98.18
July 2	102.23	Dec. 31	99.87	Nov. 27	99.46

242. Nebraska Agricultural College, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 13 N., R. 30 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 22.3 feet. Measuring point, top of pipe, 1.0 foot above land surface and 117.86 feet above datum. Water level Nov. 15, 1934, 18.14 feet below measuring point.

Nov. 15, 1934	99.72	July 17, 1935	98.77	Jan. 21, 1936	98.57
Jan. 8, 1935	100.04	Aug. 19	97.98	Mar. 30	98.90
Mar. 2	100.23	Sept. 18	98.14	June 6	98.46
Apr. 24	99.99	Oct. 24	98.09	July 23	97.35
June 13	100.24	Nov. 28	98.32	Sept. 17	96.94
July 2	99.32	Dec. 31	98.22	Nov. 28	97.68

252. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 15 N., R. 31 W. Drilled well, diameter 2 inches, depth 60 feet. Measuring point, top of pipe, 1.7 feet above land surface and 110.25 feet above datum. Water level Nov. 15, 1934, 10.13 feet below measuring point.

Nov. 15, 1934	100.12	Aug. 19, 1935	99.73	Mar. 30, 1936	100.16
Jan. 8, 1935	99.98	Sept. 17	99.72	June 7	99.79
Mar. 2	99.86	Oct. 24	99.77	Aug. 6	99.59
Apr. 24	99.74	Nov. 28	99.75	Sept. 16	99.60
June 13	100.16	Jan. 1, 1936	99.76	Nov. 28	99.59
July 17	99.99	20	99.76		

253. University of Nebraska, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 16 N., R. 31 W. Drilled well, diameter 2 inches, depth 120 feet. Measuring point, top of pipe, 2.4 feet above land surface and 171.65 feet above datum. Water level Jan. 8, 1935, 71.62 feet below measuring point.

Jan. 8, 1935	100.03	Sept. 18, 1935	100.01	Mar. 30, 1936	100.09
Mar. 2	100.14	Oct. 24	100.03	June 7	100.07
Apr. 24	100.13	Nov. 28	100.02	Aug. 6	100.07
June 13	100.10	Jan. 1, 1936	100.05	Sept. 16	100.10
July 17	100.04	20	100.05	Nov. 28	100.05
Aug. 19	100.00				

383. Lech Bros., NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 25, T. 13 N., R. 30 W. Drilled well, diameter 4 inches, depth 56.8 feet. Measuring point, top of board on south side, 0.4 foot above land surface and 147.68 feet above datum. Water level Dec. 2, 1935, 47.44 feet below measuring point.

Dec. 2, 1935	100.24	Jan. 21, 1936	100.13	June 6, 1936	100.42
31	100.25	Mar. 30	100.19	Nov. 28	99.47

Lincoln County--Continued

384. A. Howard, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 14, T. 11 N., R. 30 W. Drilled well, diameter 6 inches, depth 198.1 feet. Measuring point, hole in pump base, 0.1 foot above land surface and 270.69 feet above datum. Water level Dec. 2, 1935, 171.21 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	99.48	Apr. 2, 1936	99.46	Sept. 18, 1936	99.69
Jan. 4	100.17	Aug. 10	100.00	Dec. 8	100.07
24	99.70				

385. E. Kugler, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 10 N., R. 30 W. Drilled well, diameter 6 inches, depth 180 feet. Measuring point, top of casing, 0.5 foot above land surface and 251.78 feet above datum. Water level Dec. 2, 1935, 152.15 feet below measuring point.

Dec. 2, 1935	99.63	Apr. 2, 1936	99.41	Sept. 18, 1936	99.61
Jan. 4, 1936	100.16	Aug. 10	99.87	Dec. 8	99.80
24	99.72				

Loup County

234. University of Nebraska, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 24 N., R. 19 W. Driven well, diameter 1 inch, depth 22.5 feet. Measuring point, top of pipe, 1.0 foot above land surface and 114.82 feet above datum. Water level Oct. 10, 1934, 14.68 feet below measuring point.

Oct. 10, 1934	100.14	July 10, 1935	101.79	Jan. 11, 1936	99.89
Nov. 5	100.07	Aug. 8	101.20	Mar. 23	100.04
Dec. 29	100.00	Sept. 11	100.59	May 29	100.43
Feb. 20, 1935	99.99	Oct. 15	100.19	July 15	100.28
Apr. 15	100.00	Nov. 20	99.99	Nov. 5	101.54
June 10	101.82	Dec. 22	99.85		

345. University of Nebraska, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 21 N., R. 18 W. Driven well, diameter 1 inch, depth 15.2 feet. Measuring point, top of pipe, 0.8 foot above land surface and 105.38 feet above datum. Water level Oct. 15, 1935, 5.58 feet below measuring point.

Oct. 15, 1935	99.80	Jan. 11, 1936	100.42	July 15, 1936	99.33
Nov. 20	100.11	Mar. 23	100.79	Sept. 15	99.44
Dec. 22	100.25	May 29	100.34	Nov. 5	99.91

McPherson County

254. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 18 N., R. 31 W. Drilled well, diameter 2 inches, depth 120.5 feet. Measuring point, top of pipe, 3.3 feet above land surface and 209.55 feet above datum. Water level Nov. 26, 1934, 109.40 feet below measuring point.

Nov. 26, 1934	100.15	Aug. 19, 1935	100.06	Mar. 30, 1936	99.90
Jan. 8, 1935	99.94	Sept. 17	100.06	June 7	100.23
Mar. 1	99.84	Oct. 24	100.00	Aug. 6	100.21
Apr. 24	100.02	Nov. 28	100.00	Sept. 16	100.16
June 13	100.11	Jan. 1, 1936	100.03	Nov. 28	100.16
July 17	100.04	20	100.20		

Madison County

108. F. Prauner, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 32, T. 24 N., R. 2 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 25.1 feet. Measuring point, top of pipe, 0.2 foot below land surface and 104.30 feet above datum. Water level Aug. 16, 1934, 5.57 feet below measuring point.

Aug. 16, 1934	98.73	July 11, 1935	99.82	Jan. 13, 1936	100.02
Nov. 7	98.81	Aug. 10	97.85	Mar. 24	100.71
Dec. 31	100.00	Sept. 12	99.61	May 30	99.86
Feb. 22, 1935	100.26	Oct. 17	99.66	July 16	98.78
Apr. 16	100.86	Nov. 21	99.90	Sept. 14	99.06
June 4	101.61	Dec. 23	100.05	Nov. 10	99.57

Madison County--Continued

109. J. Bredehoff, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 23 N., R. 2 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 31 feet. Measuring point, top of pipe, 2.3 feet above land surface and 105.95 feet above datum. Water level Aug. 16, 1934, 7.01 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 16, 1934	98.94	Aug. 10, 1935	99.25	Mar. 24, 1936	100.34
Nov. 7	99.90	Sept. 12	99.68	May 30	99.66
Dec. 31	100.00	Oct. 17	99.71	July 16	98.80
Feb. 22, 1935	100.18	Nov. 21	99.92	Sept. 14	99.19
Apr. 16	100.40	Dec. 23	99.98	Nov. 10	99.61
June 4	100.73	Jan. 13, 1936	100.00		

110. A. Christian, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 22 N., R. 1 W. Drilled well, diameter 8 inches, depth 60 feet. Measuring point, bottom edge of pipe reducer, 4.9 feet above land surface and 106.49 feet above datum. Water level May 29, 1935, 5.94 feet below measuring point.

May 29, 1935	100.55	Nov. 18, 1935	100.23	May 26, 1936	100.50
July 6	100.88	Dec. 20	100.24	July 11	98.72
Aug. 5	101.55	Jan. 9, 1936	100.39	Aug. 18	98.34
Sept. 9	100.44	Mar. 20	100.50	Oct. 28	99.34
Oct. 11	100.29				

334. O. Engelsgard, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 21 N., R. 4 W. Drilled well, diameter 6 inches, depth 43 feet. Measuring point, top of casing, 0.5 foot above land surface and 123.39 feet above datum. Water level Sept. 9, 1935, 22.37 feet below measuring point.

Sept. 9, 1935	101.02	Jan. 9, 1936	100.62	July 11, 1936	100.82
Oct. 12	100.57	Mar. 21	103.92	Aug. 18	99.66
Nov. 18	100.52	May 26	101.70	Oct. 28	99.86
Dec. 20	100.56				

Merrick County

42. P. Pearson, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 16 N., R. 3 W. Drilled irrigation well, diameter 22 inches, depth 28 feet. Measuring point, top of casing, 1.5 feet above land surface and 110.72 feet above datum. Water level Aug. 4, 1934, 11.19 feet below measuring point.

Aug. 4, 1934	99.53	July 8, 1935	102.88	Jan. 9, 1936	101.57
Nov. 1	99.38	Aug. 6	101.50	Mar. 21	102.63
Dec. 19	99.75	Sept. 9	100.95	May 22	101.87
Feb. 14, 1935	100.78	Oct. 12	100.64	July 12	100.64
Apr. 12	101.13	Nov. 18	101.02	Aug. 19	99.87
May 29	102.14	Dec. 21	101.43	Oct. 28	99.53

48. H. Abel, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T. 14 N., R. 5 W. Drilled irrigation well, diameter 8 inches, depth 27.2 feet. Measuring point, top of casing, flush with land surface and 107.77 feet above datum. Water level Aug. 6, 1935, 8.00 feet below measuring point.

Aug. 6, 1934	99.77	July 8, 1935	102.27	Jan. 9, 1936	100.51
Nov. 1	99.81	Aug. 6	100.85	Mar. 21	101.15
Dec. 20	99.97	Sept. 9	100.57	May 26	101.17
Feb. 16, 1935	100.10	Oct. 12	100.38	July 12	100.07
Apr. 12	100.27	Nov. 18	100.46	Aug. 19	99.90
May 29	102.21	Dec. 21	100.56	Oct. 28	99.88

49. H. Tsudy, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 14 N., R. 7 W. Drilled irrigation well, diameter 8 inches, depth 32.5 feet. Measuring point, top of casing, 1.0 foot above land surface and 110.04 feet above datum. Water level Aug. 6, 1934, 10.74 feet below measuring point.

Aug. 6, 1934	99.30	Apr. 13, 1935	100.50	Sept. 9, 1935	100.35
Nov. 2	99.60	May 30	101.57	Oct. 12	100.13
Dec. 20	99.94	July 8	101.85	Nov. 18	100.49
Feb. 16, 1935	100.22	Aug. 6	100.55	Dec. 21	100.64

Merrick County--Continued

49. H. Tsudy.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 9, 1936	100.70	May 26, 1936	101.14	Aug. 19, 1936	99.46
Mar. 21	101.63	July 13	100.39	Oct. 28	99.51

50. C. Reeves, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33, T. 13 N., R. 7 W. Drilled irrigation well, diameter 8 inches, depth 27 feet. Measuring point, top of wooden platform, 2.5 feet above land surface and 110.66 feet above datum. Water level Aug. 6, 1934, 10.83 feet below measuring point.

Aug. 6, 1934	99.83	July 8, 1935	102.96	Jan. 9, 1936	100.71
Nov. 2	99.73	Aug. 6	101.14	Mar. 21	101.45
Dec. 20	99.96	Sept. 9	100.50	May 26	101.54
Feb. 16, 1935	100.19	Oct. 12	100.31	July 13	100.48
Apr. 13	100.49	Nov. 18	100.49	Aug. 19	100.05
May 30	101.76	Dec. 21	100.63	Oct. 28	99.86

Morrill County

84. J. Jensen, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 22 N., R. 50 W. Drilled well, diameter 6 inches, depth 90.9 feet. Measuring point, top of casing, 1.5 feet above land surface and 183.80 feet above datum. Water level Aug. 29, 1934, 83.99 feet below measuring point.

Aug. 29, 1934	99.81	July 18, 1935	100.18	Jan. 21, 1936	100.36
Nov. 16	100.00	Aug. 20	100.09	Mar. 31	100.45
Jan. 9, 1935	100.00	Sept. 18	100.21	June 8	100.40
Mar. 4	99.99	Oct. 25	100.24	Aug. 7	100.41
Apr. 25	100.11	Nov. 29	100.23	Oct. 28	100.40
June 14	100.26	Jan. 2, 1936	100.51	Nov. 30	100.34

85. State of Nebraska, Department of Roads and Irrigation, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 32, T. 20 N., R. 50 W. Drilled well, diameter 6 inches, depth 7 feet. Measuring point, top of pipe, 0.3 foot above land surface and 104.45 feet above datum. Water level Apr. 30, 1930, 4.35 feet below measuring point. Water level is measured daily by the Department of Roads and Irrigation.

Apr. 30, 1930	100.10	Mar. 1, 1933	100.17	Feb. 6, 1935	100.02
May 16	100.72	Apr. 5	100.16	Mar. 3	100.06
July 18	99.27	May 3	100.29	Apr. 3	100.05
Oct. 4	99.43	June 7	99.91	May 2	100.70
Feb. 2, 1931	99.60	July 5	99.45	June 7	100.97
May 6	100.36	Aug. 2	99.65	July 5	99.67
June 5	99.71	Sept. 6	100.30	Aug. 2	99.26
July 3	99.53	Oct. 4	100.21	Sept. 6	99.19
Aug. 5	99.35	Nov. 1	100.11	Oct. 4	99.89
Sept. 2	99.81	Dec. 6	100.59	Nov. 1	100.16
Oct. 7	100.00	Jan. 3, 1934	100.23	Dec. 7	100.19
Nov. 4	100.07	Feb. 7	100.25	Jan. 1, 1936	100.07
22	100.13	Mar. 7	100.41	Feb. 1	99.93
Feb. 6, 1932	100.23	Apr. 4	100.03	Mar. 1	100.05
June 1	99.73	May 2	99.69	Apr. 1	100.01
July 6	99.71	June 6	99.42	May 1	99.94
Aug. 3	99.87	July 4	99.33	June 1	99.25
Sept. 7	99.90	Aug. 1	99.20	July 2	99.48
Oct. 5	100.25	Sept. 5	99.51	Aug. 1	99.11
Nov. 2	100.42	Oct. 3	99.84	Sept. 1	99.20
Dec. 7	100.27	Nov. 7	99.95	Oct. 1	99.63
Jan. 4, 1933	100.24	Dec. 5	99.91	Nov. 3	99.95
Feb. 1	100.21	Jan. 1, 1935	100.00	30	100.05

Morrill County--Continued

97. F. Smith, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 20 N., R. 50 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 34.7 feet. Measuring point, top of pipe, 2.8 feet above land surface and 116.30 feet above datum. Water level Sept. 8, 1934, 16.80 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 8, 1934	99.50	July 17, 1935	99.43	Jan. 21, 1936	100.14
Nov. 16	99.81	Aug. 20	99.53	Mar. 31	99.40
Jan. 9, 1935	100.04	Sept. 18	99.55	June 8	99.85
Mar. 4	99.96	Oct. 25	99.83	Aug. 7	99.80
Apr. 25	99.96	Nov. 29	99.95	Sept. 10	99.60
June 14	99.83	Jan. 2, 1936	100.24	Nov. 30	100.24

Nance County

43. Greek estate, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 17 N., R. 4 W. Bored well, diameter 6 inches, depth 20.4 feet. Measuring point, top of casing, 0.6 foot above land surface and 106.41 feet above datum. Water level Aug. 4, 1934, 6.82 feet below measuring point.

Aug. 4, 1934	99.59	Aug. 6, 1935	103.21	Mar. 21, 1936	103.62
Nov. 1	99.65	Sept. 9	100.66	May 22	101.95
Dec. 19	99.94	Oct. 12	100.33	July 12	100.74
Feb. 14, 1935	100.27	Nov. 18	100.33	Aug. 19	100.06
Apr. 12	100.54	Dec. 21	100.41	Oct. 28	99.61
May 29	101.75	Jan. 9, 1936	100.43	Nov. 8	99.54
July 8	102.16				

45. F. Greene, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 8, T. 15 N., R. 8 W. Drilled well, diameter 4 inches, depth 100+ feet. Measuring point, top of pipe, 0.3 foot above land surface and 164.90 feet above datum. Water level Aug. 6, 1934, 64.91 feet below measuring point.

Aug. 6, 1934	99.99	July 10, 1935	100.22	Dec. 23, 1935	99.70
Nov. 6	99.94	Aug. 9	100.00	Jan. 12, 1936	99.88
Dec. 29	99.99	Sept. 11	99.88	Mar. 24	100.00
Feb. 21, 1935	100.26	Oct. 16	99.83	May 29	100.09
Apr. 16	100.21	Nov. 20	99.90	July 16	99.89
June 11	100.21				

371. W. Christiansen, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 17 N., R. 6 W. Drilled well, diameter 3 inches, depth 77.5 feet. Measuring point, top of casing, 2.0 feet above land surface and 145.37 feet above datum. Water level Nov. 18, 1935, 44.99 feet below measuring point.

Nov. 18, 1935	100.38	Mar. 21, 1936	100.26	Aug. 19, 1936	99.84
Dec. 20	100.23	May 26	100.16	Nov. 8	99.68
Jan. 9, 1936	100.23	July 12	99.82		

Nemaha County

11. Mrs. Horm, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 5 N., R. 14 E. Dug well, diameter 36 inches, depth 22.8 feet. Measuring point, top of wooden platform, 0.5 foot above land surface and 119.31 feet above datum. Water level July 16, 1934, 20.10 feet below measuring point.

July 16, 1934	99.21	July 30, 1935	104.75	Mar. 16, 1936	107.34
Oct. 22	98.81	Sept. 8	103.84	May 19	107.44
Dec. 11	100.13	Oct. 5	102.33	July 6	106.28
Feb. 5, 1935	99.76	Nov. 11	103.51	Aug. 28	104.99
Apr. 5	99.03	Dec. 16	103.82	Aug. 24	103.33
May 23	100.46	Jan. 3, 1936	104.02	Oct. 14	103.31
July 1	105.90				

Nuckolls County

164. F. Hornbussel, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 1 N., R. 7 W. Drilled well, diameter 6 inches, depth 60.8 feet. Measuring point, top of wooden platform, 1.6 feet above land surface and 114.41 feet above datum. Water level Oct. 2, 1934, 14.81 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1934	99.60	July 24, 1935	100.36	Jan. 28, 1936	100.34
Dec. 2	99.97	Aug. 27	99.65	Apr. 5	100.05
Jan. 22, 1935	100.03	Sept. 30	99.88	June 15	99.50
Mar. 14	100.07	Oct. 31	100.13	Aug. 13	99.01
May 13	100.01	Dec. 6	100.36	Sept. 23	99.05
June 26	100.74	Jan. 8, 1936	100.38	Dec. 17	99.47

165. E. Dillon, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 2 N., R. 5 W. Drilled well, diameter 7 inches, depth 146.7 feet. Measuring point, top of iron plate, 0.8 foot above land surface and 217.18 feet above datum. Water level Oct. 2, 1934, 116.75 feet below measuring point.

Oct. 2, 1934	100.43	July 24, 1935	100.64	Jan. 28, 1936	105.60
Dec. 2	99.93	Aug. 27	100.98	June 16	105.52
Jan. 22, 1935	100.05	Sept. 30	101.46	Aug. 14	106.93
Mar. 15	101.39	Dec. 7	102.69	Sept. 23	101.40
May 14	98.39	Jan. 8, 1936	103.39	Dec. 17	99.43
June 26	99.55				

392. J. Krepshaugh, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 4 N., R. 8 W. Drilled well, diameter 4 inches, depth 98 feet. Measuring point, top of casing, 0.4 foot above land surface and 184.53 feet above datum. Water level Dec. 6, 1935, 84.85 feet below measuring point.

Dec. 6, 1935	99.68	June 15, 1936	99.61	Sept. 22, 1936	99.51
Jan. 8, 1936	99.83	Aug. 13	99.41	Dec. 13	99.24
28	99.67				

393. W. Statz, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26, T. 4 N., R. 7 W. Drilled well, diameter 6 inches, depth 72 feet. Measuring point, top of iron plate, 0.9 foot above land surface and 154.07 feet above datum. Water level Dec. 6, 1935, 54.18 feet below measuring point.

Dec. 6, 1935	99.89	Apr. 5, 1936	99.81	Sept. 22, 1936	99.68
Jan. 8, 1936	99.92	June 15	99.75	Dec. 17	99.58
28	99.89	Aug. 13	99.70		

Otoe County

8. E. McKee, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 3, T. 8 N., R. 10 E. Bored well, diameter 24 inches, depth 15.5 feet. Measuring point, top of casing, 1.8 feet above land surface and 112.14 feet above datum. Water level July 17, 1934, 12.37 feet below measuring point.

July 17, 1934	99.77	Aug. 1, 1935	100.36	Mar. 16, 1936	101.79
Oct. 24	100.99	Sept. 3	99.25	May 19	101.19
Dec. 12	100.11	Oct. 5	99.65	July 6	99.92
Feb. 5, 1935	99.83	Nov. 11	100.66	27	99.55
Apr. 4	100.06	Dec. 16	100.07	Aug. 25	99.21
May 23	100.74	Jan. 4, 1936	100.00	Oct. 14	99.15
July 1	100.81				

9. W. Gellerman, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 8 N., R. 11 E. Dug well, diameter 24 inches, depth 20.4 feet. Measuring point, top of wooden platform, 1.4 feet above land surface and 112.73 feet above datum. Water level July 17, 1934, 15.13 feet below measuring point.

July 17, 1934	97.60	July 1, 1935	103.94	Dec. 16, 1935	100.43
Oct. 24	100.94	Aug. 1	101.75	Jan. 3, 1936	100.06
Dec. 11	100.17	Sept. 3	100.10	July 28	98.08
Feb. 5, 1935	99.64	Oct. 5	99.29	Aug. 25	97.98
Apr. 4	100.87	Nov. 11	100.75	Oct. 14	97.28
May 23	103.70				

Otoe County--Continued

10. L. Damme, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 7 N., R. 12 E. Bored well, diameter 8 inches, depth 36.9 feet. Measuring point, top of pump base, 0.5 foot above land surface and 122.67 feet above datum. Water level July 17, 1934, 22.45 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 17, 1934	100.22	July 1, 1935	100.25	Jan. 3, 1936	100.34
Oct. 24	99.95	30	99.91	Mar. 16	100.58
Dec. 11	100.05	Sept. 3	99.96	May 19	100.48
Feb. 5, 1935	99.91	Oct. 5	99.67	July 6	100.03
Apr. 4	99.91	Nov. 11	100.27	28	99.78
May 23	99.97	Dec. 16	100.45	Oct. 14	99.35

Pawnee County

4. E. Hunzeker, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 8, T. 2 N., R. 11 E. Dug well, diameter 42 inches, depth 31.6 feet. Measuring point, top of curbing, 1.0 foot above land surface and 121.36 feet above datum. Water level July 16, 1934, 23.28 feet below measuring point.

July 16, 1934	98.08	July 1, 1935	106.71	Jan. 3, 1936	104.63
Oct. 22	98.81	30	103.64	Mar. 16	104.27
Dec. 11	100.17	Sept. 3	102.59	May 19	106.79
Feb. 5, 1935	99.72	Oct. 5	102.92	July 28	102.35
Apr. 5	99.79	Nov. 11	105.41	Oct. 7	99.30
May 23	100.97	Dec. 16	104.81		

Perkins County

151. A. Lagler, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 11 N., R. 39 W. Drilled well, diameter 3 inches, depth 198.7 feet. Measuring point, top of pipe, flush with land surface and 261.82 feet above datum. Water level Sept. 24, 1934, 162.05 feet below measuring point.

Sept. 24, 1934	99.77	July 19, 1935	100.02	Jan. 23, 1936	100.23
Nov. 20	100.13	Aug. 21	99.99	Apr. 1	100.25
Jan. 11, 1935	99.96	Sept. 25	100.24	June 11	100.31
Mar. 9	100.12	Oct. 27	100.22	Aug. 9	100.43
Apr. 29	99.72	Nov. 30	100.02	Sept. 17	100.47
June 16	100.22	Jan. 3, 1936	100.47	Dec. 5	100.87

364. M. Brown, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 9 N., R. 38 W. Drilled well, diameter 4 inches, depth 161 feet. Measuring point, top of casing, 2.6 feet above land surface and 132.20 feet above datum. Water level Nov. 30, 1935, 132.12 feet below measuring point.

Nov. 30, 1935	100.08	Apr. 1, 1936	100.14	Sept. 17, 1936	100.33
Jan. 3, 1936	100.25	June 11	100.25	Dec. 5	100.52
23	100.18	Aug. 9	100.31		

Phelps County

157. Western Public Service Co., NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 5 N., R. 18 W. Drilled well, diameter 8 inches, depth 173 feet. Measuring point, top of concrete pump base, flush with land surface and 252.41 feet above datum. Water level Sept. 28, 1934, 152.66 feet below measuring point.

Sept. 28, 1934	99.75	Aug. 24, 1935	99.34	Jan. 25, 1936	100.16
Nov. 26	100.04	Sept. 26	99.42	June 13	100.47
Jan. 21, 1935	99.98	Oct. 30	99.86	Aug. 12	98.82
Mar. 13	100.15	Dec. 4	100.23	Sept. 21	99.59
May 11	99.89	Jan. 7, 1936	100.22	Dec. 10	99.73
June 20	100.04				

Phelps County--Continued

184. A. Dahlgren, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 7 N., R. 20 W. Drilled well, diameter 3 inches, depth to top of pump cylinder 173.2 feet. Measuring point, top of pipe, 1.4 feet above land surface and 272.92 feet above datum. Water level Sept. 28, 1934, 171.58 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 28, 1934	101.54	June 20, 1935	100.08	Oct. 30, 1935	101.10
Nov. 15	99.80	July 22	101.42	Dec. 4	101.37
Dec. 27	99.99	Aug. 24	101.26	Jan. 7, 1936	101.57
Mar. 1, 1935	100.07	Sept. 26	101.38	25	100.94
May 2	100.15				

275. F. Skiles, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T. 8 N., R. 17 W. Drilled irrigation well, diameter 24 inches, depth 43 feet. Measuring point, top of steel beam, 1.0 foot above land surface and 111.73 feet above datum. Water level Nov. 4, 1930, 10.12 feet below measuring point.

Nov. 4, 1930	101.61	Aug. 2, 1932	101.13	May 17, 1934	101.18
Dec. 2	102.04	Sept. 6	100.52	June 18	100.53
Jan. 6, 1931	102.06	Oct. 4	100.36	Aug. 21	99.56
Feb. 3	102.10	Nov. 1	101.02	Sept. 21	99.47
Mar. 3	102.03	Dec. 6	101.41	Nov. 3	99.57
Apr. 7	102.33	Jan. 3, 1933	101.64	Dec. 22	99.84
May 5	102.31	Feb. 7	101.68	Feb. 19, 1935	100.76
June 2	101.79	Mar. 7	101.81	Apr. 15	100.84
July 6	100.95	Apr. 4	101.72	June 10	102.62
Aug. 3	99.98	May 2	102.59	July 9	102.03
Sept. 8	100.23	June 6	102.50	Aug. 8	100.74
Oct. 5	100.09	July 4	101.42	Sept. 10	100.59
Nov. 2	100.51	Aug. 1	100.80	Oct. 14	100.40
Dec. 1	101.01	Sept. 19	100.77	Nov. 19	100.79
Jan. 6, 1932	101.62	Oct. 19	101.05	Dec. 21	101.11
Feb. 2	101.81	Nov. 17	100.88	Jan. 10, 1936	101.06
Mar. 1	102.65	Dec. 19	101.47	Mar. 23	101.41
Apr. 5	102.20	Jan. 19, 1934	101.69	May 28	101.47
May 3	101.97	Feb. 20	101.57	July 14	100.43
June 7	102.40	Mar. 20	101.61	Aug. 21	99.63
July 5	102.29	Apr. 18	101.51	Oct. 29	99.35

276. W. Bamford, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 8 N., R. 17 W. Drilled irrigation well, diameter 24 inches, depth 46 feet. Measuring point, top of wood beam, 1.2 feet above land surface and 115.43 feet above datum. Water level Nov. 4, 1930, 14.20 feet below measuring point.

Nov. 4, 1930	101.23	July 5, 1932	101.91	May 17, 1934	100.92
Dec. 2	101.35	Aug. 2	101.79	June 18	100.76
Jan. 6, 1931	101.40	Sept. 6	101.53	July 17	100.59
Feb. 3	101.28	Oct. 4	101.20	Aug. 21	100.40
Mar. 3	101.23	Nov. 1	101.09	Sept. 21	100.24
Apr. 14	101.48	Dec. 6	101.05	Nov. 3	100.07
May 5	101.54	Jan. 3, 1933	101.06	Dec. 22	99.98
June 2	101.58	Feb. 7	101.05	Feb. 19, 1935	100.11
July 6	101.39	Mar. 7	101.06	Apr. 15	100.18
Aug. 3	a/ 86.43	Apr. 4	101.05	June 10	101.60
Sept. 8	100.89	May 2	101.41	July 9	102.29
Oct. 5	100.90	June 6	102.25	Aug. 8	101.91
Nov. 2	100.72	July 4	101.99	Sept. 10	101.74
Dec. 1	100.65	Oct. 19	101.14	Oct. 14	101.45
Jan. 6, 1932	100.75	Nov. 17	101.09	Nov. 19	101.22
Feb. 2	100.79	Dec. 19	101.06	Dec. 21	101.14
Mar. 1	101.15	Jan. 19, 1934	101.05	Jan. 10, 1936	101.09
Apr. 5	101.34	Feb. 20	101.04	Mar. 23	100.99
May 3	101.35	Mar. 20	101.04	May 28	101.15
June 7	101.46	Apr. 18	100.98	Oct. 29	100.05

a/ Pumping.

Phelps County--Continued

277. University of Nebraska, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 8 N., R. 18 W. Driven well, diameter 1 inch, depth 12.3 feet. Measuring point, top of pipe, 2.0 feet above land surface and 104.37 feet above datum. Water level Aug. 3, 1931, 4.06 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 3, 1931	100.31	Jan. 31, 1933	101.85	Aug. 21, 1934	98.92
Sept. 7	99.84	Mar. 7	102.32	Sept. 21	98.76
Oct. 5	99.80	Apr. 4	101.40	Nov. 3	98.67
Nov. 3	100.86	May 2	102.40	Dec. 22	99.80
Dec. 1	101.57	June 6	101.29	Feb. 19, 1935	100.87
Jan. 5, 1932	102.15	July 4	100.29	Apr. 15	100.61
Feb. 2	102.03	Aug. 1	99.86	June 10	101.92
23	103.78	Sept. 19	100.64	July 9	100.72
Apr. 5	101.59	Oct. 19	101.00	Aug. 8	99.64
May 3	101.51	Nov. 17	101.31	Sept. 10	100.25
June 7	101.97	Dec. 19	101.52	Oct. 14	100.19
July 5	101.83	Jan. 19, 1934	101.74	Nov. 19	100.76
Aug. 2	100.69	Feb. 20	101.53	Dec. 21	100.84
Sept. 6	99.91	Mar. 20	101.45	Jan. 10, 1936	100.98
Oct. 4	100.22	Apr. 18	101.10	Mar. 23	100.99
Nov. 1	101.23	May 17	100.51	May 28	100.49
Dec. 6	101.56	June 18	99.82	July 14	99.79
Jan. 3, 1933	101.71	July 17	99.37	Oct. 30	98.57

Pierce County

68. F. Kroupa, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 33, T. 28 N., R. 1 W. Dug well, diameter 48 inches, depth 24 feet. Measuring point, top of iron plate, 1.2 feet above land surface and 122.21 feet above datum. Water level Aug. 15, 1934, 22.14 feet below measuring point.

Aug. 15, 1934	100.07	July 6, 1935	101.48	Jan. 8, 1936	99.86
Oct. 31	100.07	Aug. 5	102.82	Mar. 20	100.05
Dec. 18	100.04	Sept. 7	101.50	May 25	100.37
Feb. 13, 1935	99.87	Oct. 11	100.69	July 11	100.24
Apr. 11	100.11	Nov. 16	100.12	Aug. 3	100.04
May 28	100.50	Dec. 20	100.23	Nov. 11	99.74

70. Village of Foster, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 33, T. 27 N., R. 3 W. Drilled well, diameter 4 inches, depth 45.1 feet. Measuring point, bottom edge of pipe elbow, 0.8 foot above land surface and 104.48 feet above datum. Water level Aug. 23, 1934, 5.55 feet below measuring point.

Aug. 23, 1934	98.93	July 11, 1935	100.71	Jan. 15, 1936	100.21
Nov. 6	99.71	Aug. 10	99.67	Mar. 24	101.93
Dec. 31	99.99	Sept. 12	99.86	May 30	100.69
Feb. 22, 1935	100.63	Oct. 17	99.76	July 17	99.31
Apr. 17	101.48	Nov. 21	100.07	Sept. 14	99.05
June 4	102.18	Dec. 23	100.46	Nov. 11	99.63

Platte County

39. A. Grossnicklaus, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 18 N., R. 1 W. Bored well, diameter 1 $\frac{1}{2}$ inches, depth 24 feet. Measuring point, top of pipe, 0.9 foot above land surface and 118.84 feet above datum. Water level Dec. 19, 1934, 18.42 feet below measuring point.

Dec. 19, 1934	100.42	Aug. 2, 1935	99.44	Jan. 7, 1936	95.45
Feb. 12, 1935	98.54	Sept. 5	99.28	Mar. 18	a/113.93
Apr. 10	97.73	Oct. 10	97.28	July 9	98.05
May 27	99.71	Nov. 15	96.15	31	96.85
July 5	100.16	Dec. 18	95.80	Oct. 23	95.99

a/ Flood water in well.

Platte County--Continued

40. E. Schacher, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2, T. 17 N., R. 2 W. Drilled well, diameter 3 inches, depth 43.9 feet. Measuring point, top of valve seat, 4 feet below land surface and 103.93 feet above datum. Water level Aug. 3, 1934, 3.99 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 3, 1934	99.94	July 5, 1935	101.49	Jan. 7, 1936	100.07
Nov. 1	99.72	Aug. 2	100.59	Mar. 18	101.08
Dec. 19	99.96	Sept. 5	100.14	May 22	100.61
Feb. 12, 1935	100.14	Oct. 10	99.88	July 9	99.68
Apr. 10	100.39	Nov. 15	99.99	31	99.36
May 27	101.00	Dec. 18	100.04	Oct. 23	99.13

41. H. Ernst, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 12, T. 16 N., R. 2 W. Driven well, diameter 1 $\frac{1}{2}$ inches, depth 17.5 feet. Measuring point, top of pipe, 1.0 foot above land surface and 112.10 feet above datum. Water level Aug. 4, 1934, 12.16 feet below measuring point.

Aug. 4, 1934	99.94	July 5, 1935	104.31	Jan. 7, 1936	100.95
Nov. 1	99.56	Aug. 2	101.95	Mar. 18	102.28
Dec. 19	99.86	Sept. 5	100.61	May 22	101.71
Feb. 12, 1935	100.53	Oct. 9	100.17	July 9	100.36
Apr. 9	101.02	Nov. 15	100.33	31	99.91
May 25	103.34	Dec. 18	100.82	Oct. 23	99.39

339. E. Gigas, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 20 N., R. 1 W. Drilled well, diameter 6 inches, depth 30 feet. Measuring point, top of platform, 1.8 feet above land surface and 106.35 feet above datum. Water level Sept. 6, 1935, 6.10 feet below measuring point.

Sept. 6, 1935	100.25	Jan. 7, 1936	100.37	May 22, 1936	100.82
Nov. 15	100.12	Mar. 19	101.50	Oct. 23	100.41
Dec. 19	100.26				

342. University of Nebraska, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 20 N., R. 1 E. Bored well, diameter 3 inches, depth 11.5 feet. Measuring point, top of casing, 1.5 feet above land surface and 104.38 feet above datum. Water level Nov. 15, 1935, 4.32 feet below measuring point.

Nov. 15, 1935	100.06	Mar. 19, 1936	101.45	July 31, 1936	98.39
Dec. 19	100.32	May 22	100.57	Oct. 23	99.03
Jan. 7, 1936	100.34	July 9	98.91		

368. L. Hither, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 20 N., R. 2 W. Bored well, diameter 14 inches, depth 17.1 feet. Measuring point, top of iron plate, 0.5 foot above land surface and 108.91 feet above datum. Water level Nov. 15, 1935, 7.90 feet below measuring point.

Nov. 15, 1935	101.01	Mar. 19, 1936	104.65	July 31, 1936	102.44
Dec. 18	100.52	May 22	104.42	Oct. 23	103.67
Jan. 7, 1936	100.23	July 9	103.61		

Redwillow County

137. F. Duckworth, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 8, T. 3 N., R. 27 W. Drilled well, diameter 4 inches, depth 22.5 feet. Measuring point, top of casing, 1.1 feet above land surface and 114.30 feet above datum. Water level Sept. 6, 1934, 14.44 feet below measuring point.

Sept. 6, 1934	99.86	July 20, 1935	101.57	Jan. 24, 1936	100.74
Nov. 24	99.93	Aug. 23	101.09	Apr. 3	100.76
Jan. 14, 1935	100.02	Sept. 26	101.33	June 12	100.97
Mar. 12	100.18	Oct. 29	101.08	Sept. 20	100.39
May 2	100.35	Dec. 3	100.89	Dec. 9	99.97
June 20	101.51	Jan. 6, 1936	100.80		

Redwillow County--Continued

139. F. Cain, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 3 N., R. 30 W. Drilled irrigation well, depth 66.3 feet. Measuring point, top of iron plate, 2.0 feet above land surface and 120.70 feet above datum. Water level Sept. 7, 1934, 22.36 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 7, 1934	98.34	July 20, 1935	99.36	Jan. 24, 1936	99.14
Nov. 22	99.79	Aug. 23	98.74	Apr. 3	99.36
Jan. 12, 1935	100.06	Sept. 26	98.88	June 12	99.24
Mar. 11	100.15	Oct. 29	98.92	Aug. 11	97.77
May 1	99.75	Dec. 3	99.15	Sept. 18	97.31
June 21	100.34	Jan. 6	98.98	Dec. 8	98.48

150. J. Colgan, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 3 N., R. 30 W. Drilled well, diameter 4 inches, depth 143.7 feet. Measuring point, top of pump base at hole, 0.2 foot above land surface and 236.53 feet above datum. Water level Sept. 23, 1934, 136.45 feet below measuring point.

Sept. 23, 1934	100.08	June 20, 1935	99.95	Dec. 3, 1935	99.74
Nov. 24	100.02	July 20	99.99	Jan. 6, 1936	99.77
Jan. 15, 1935	99.99	Aug. 23	100.01	24	99.83
Mar. 12	99.93	Sept. 26	99.82	Sept. 19	99.75
May 2	99.85	Oct. 29	100.05	Dec. 7	100.05

179. J. Clamp, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 2 N., R. 29 W. Drilled well, diameter 4 inches, depth 158.2 feet. Measuring point, top of pump base at hole, 0.7 foot above land surface and 256.37 feet above datum. Water level Sept. 25, 1934, 156.48 feet below measuring point.

Sept. 25, 1934	99.89	July 22, 1935	99.93	Jan. 6, 1936	99.64
Nov. 24	99.96	Aug. 23	99.90	24	99.70
Jan. 14, 1935	100.01	Sept. 26	99.72	Aug. 11	99.85
Mar. 12	99.93	Oct. 29	99.92	Sept. 19	99.90
May 2	99.80	Dec. 3	99.62	Dec. 9	99.77

328. S. Flanagan, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T. 4 N., R. 27 W. Drilled well, diameter 6 inches, depth 76.5 feet. Measuring point, top of casing, 1.4 feet above land surface and 168.03 feet above datum. Water level Jan. 14, 1935, 67.98 feet below measuring point.

Jan. 14, 1935	100.05	Aug. 23, 1935	100.15	Jan. 24, 1936	100.83
Mar. 12	100.22	Sept. 26	100.53	Apr. 3	100.99
May 2	100.22	Oct. 29	100.61	June 12	101.20
June 20	100.85	Dec. 3	100.66	Aug. 11	100.36
July 20	100.67	Jan. 6, 1936	100.78	Sept. 20	99.97

Richardson County

5. W. Hogue, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 2 N., R. 14 E. Dug well, diameter 24 inches, depth 35 feet. Measuring point, top of well platform, 1.0 foot above land surface and 131.53 feet above datum. Water level July 16, 1934, 33.28 feet below measuring point.

July 16, 1934	98.25	July 30, 1935	104.92	Mar. 16, 1936	104.64
Oct. 22	98.77	Sept. 3	103.09	May 19	109.23
Dec. 11	100.00	Oct. 5	101.92	July 6	103.75
Jan. 5, 1935	100.01	Nov. 11	102.61	28	102.89
Apr. 5	99.97	Dec. 16	102.99	Aug. 24	102.34
May 23	102.34	Jan. 3	103.01	Oct. 12	102.51
July 1	108.47				

7. F. Brown, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T. 1 N., R. 17 E. Bored well, diameter 8 inches, depth 30.7 feet. Measuring point, top of 2- by 4-inch board, 2.0 feet above land surface and 119.86 feet above datum. Water level July 16, 1934, 20.00 feet below measuring point.

July 16	99.86	Feb. 5, 1935	100.03	July 1, 1935	114.51
Oct. 22	99.13	Apr. 5	99.94	30	108.31
Dec. 11	99.98	May 23	105.85	Sept. 3	106.08

Richardson County--Continued

7. F. Brown--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 5, 1935	104.40	Mar. 16, 1936	111.68	July 28, 1936	103.86
Nov. 11	105.36	May 19	111.76	Aug. 24	102.41
Dec. 16	105.61	July 6	106.02	Oct. 14	101.38
Jan. 3, 1936	105.49				

Rock County

117. University of Nebraska, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 30 N., R. 17 W. Driven well, diameter 1 inch, depth 15.1 feet. Measuring point, top of pipe, 1.5 feet above land surface and 106.15 feet above datum. Water level Sept. 29, 1934, 6.40 feet below measuring point.

Sept. 29, 1934	99.75	July 13, 1935	101.62	Mar. 25, 1936	101.32
Jan. 2, 1935	100.00	Oct. 18	99.76	May 31	102.26
Feb. 23	100.35	Nov. 22	99.53	Sept. 13	99.55
Apr. 17	101.20	Dec. 24	99.74	Nov. 19	100.03
June 5	102.92	Jan. 16, 1936	100.06		

198. H. Gallagher, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 30 N., R. 19 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 27.2 feet. Measuring point, top of pipe, 1.0 foot above land surface and 105.47 feet above datum. Water level Nov. 8, 1934, 5.70 feet below measuring point.

Nov. 8, 1934	99.77	Aug. 12, 1935	99.43	Mar. 25, 1936	100.91
Jan. 2, 1935	100.01	Sept. 13	99.20	May 31	102.36
Feb. 23	100.42	Oct. 18	99.29	July 18	99.65
Apr. 17	101.62	Nov. 22	99.72	Sept. 13	98.91
June 5	102.96	Dec. 24	99.93	Nov. 19	99.57
July 13	100.52	Jan. 16, 1936	100.03		

Saline County

194. Prybl estate, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 6 N., R. 1 E. Drilled well, diameter 10 inches, depth 37.8 feet. Measuring point, top of casing, 0.5 foot above land surface and 127.03 feet above datum. Water level Oct. 8, 1934, 27.34 feet below measuring point.

Oct. 8, 1934	99.69	July 25, 1935	102.41	Jan. 29, 1936	102.14
Dec. 3	99.96	Aug. 29	101.04	Apr. 6	102.88
Jan. 23, 1935	100.03	Oct. 1	101.79	Aug. 14	99.69
Mar. 15	100.26	Dec. 7	102.07	Sept. 23	98.95
May 14	100.46	Jan. 9, 1936	102.23	Dec. 19	99.05
June 27	102.94				

341. A. Kohout, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 7 N., R. 3 E. Bored well, diameter 8 inches, depth 66.9 feet. Measuring point, top of casing, 0.3 foot above land surface and 149.84 feet above datum. Water level Oct. 1, 1935, 49.42 feet below measuring point.

Oct. 1, 1935	100.42	Jan. 29, 1936	100.16	Aug. 14, 1936	99.78
Nov. 1	100.60	Apr. 6	100.02	Sept. 23	99.61
Dec. 7	100.34	June 16	100.03	Dec. 19	99.33
Jan. 9, 1936	100.25				

Sarpy County

26. Rahn, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 13 N., R. 13 E. Dug well, diameter 36 inches, depth 14.9 feet. Measuring point, top of curbing, 1.0 foot above land surface and 114.61 feet above datum. Water level July 30, 1934, 14.28 feet below measuring point.

July 30, 1934	100.33	Sept. 5, 1935	100.10	Mar. 18, 1936	104.04
Oct. 25	99.62	Oct. 9	99.48	May 21	104.15
Dec. 14	99.90	Nov. 14	100.34	July 8	103.26
Feb. 11, 1935	100.23	Dec. 18	101.87	30	102.56
July 3	102.69	Jan. 6, 1936	102.02	Oct. 19	101.68
Aug. 1	102.40				

Sarpy County--Continued

27. Chicago, Burlington & Quincy R.R., NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 13 N., R. 13 E. Drilled well, diameter 4 inches, depth 18.7 feet. Measuring point, top of pipe, 0.9 foot above land surface and 104.27 feet above datum. Water level July 30, 1934, 5.79 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 30, 1934	98.48	July 3, 1935	101.86	Jan. 6, 1936	100.42
Oct. 25	99.64	Aug. 1	99.23	Mar. 18	101.60
Dec. 14	99.40	Sept. 5	99.50	May 21	100.72
Feb. 11, 1935	101.43	Oct. 9	99.07	July 8	99.34
Apr. 6	99.97	Nov. 14	99.79	30	98.84
May 24	101.29	Dec. 18	100.25	Oct. 19	99.72

323. S. Arbuthnot, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 26, T. 14 N., R. 12 E. Dug well, diameter 36 inches, depth 47.5 feet. Measuring point, top of 2- by 12-inch plank, 0.5 foot above land surface and 132.89 feet above datum. Water level Dec. 14, 1934, 32.94 feet below measuring point.

Dec. 14, 1934	99.95	Sept. 5, 1935	98.25	Mar. 18, 1936	100.59
Feb. 11, 1935	100.12	Oct. 9	97.29	May 21	101.51
Apr. 6	100.79	Nov. 14	97.82	July 8	98.89
May 24	101.18	Dec. 18	97.93	30	97.71
July 3	101.08	Jan. 6, 1936	98.34	Oct. 20	95.74
Aug. 1	99.84				

Saunders County

19. Chicago, Burlington & Quincy R.R., SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 14 N., R. 8 E. Dug well, diameter 40 inches, depth 20.7 feet. Measuring point, top of curbing, flush with land surface and 111.63 feet above datum. Water level July 26, 1934, 12.57 feet below measuring point.

July 26, 1934	99.06	July 2, 1935	100.42	Jan. 4, 1936	100.13
Oct. 25	99.63	31	99.72	Mar. 17	101.10
Dec. 13	99.96	Sept. 4	99.76	May 20	100.47
Feb. 9, 1935	100.11	Oct. 8	99.38	July 7	99.60
Apr. 8	100.26	Nov. 13	99.77	29	99.34
May 24	100.39	Dec. 17	99.91	Oct. 16	99.43

21. City of Lincoln, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 11, T. 13 N., R. 9 E. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 12.1 feet. Measuring point, top of pipe, flush with land surface and 106.00 feet above datum. Water level July 26, 1934, 7.06 feet below measuring point.

July 26, 1934	98.94	July 2, 1935	103.76	Jan. 4, 1936	101.26
Oct. 26	99.01	31	100.12	Mar. 17	104.34
Dec. 13	99.87	Sept. 4	100.63	May 20	101.56
Feb. 9, 1935	100.33	Oct. 8	100.34	July 7	99.46
Apr. 8	100.99	Nov. 13	100.42	29	98.91
May 24	102.58	Dec. 17	101.18	Oct. 16	98.78

22. City of Lincoln, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 13 N., R. 9 E. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 11.7 feet. Measuring point, top of pipe, 3.0 feet below general land surface and 106.55 feet above datum. Water level July 26, 1934, 7.20 feet below measuring point.

July 26, 1934	99.35	July 2, 1935	102.48	Jan. 4, 1936	100.25
Oct. 26	99.33	31	101.61	Mar. 17	102.89
Dec. 13	99.90	Sept. 4	99.98	May 20	101.30
Feb. 9, 1935	100.20	Oct. 8	100.14	July 7	100.27
Apr. 8	100.98	Nov. 13	100.53	29	99.57
May 24	100.98	Dec. 17	100.86	Oct. 16	98.84

Saunders County--Continued

331. Union Pacific R.R., SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 14 N., R. 5 E. Dug well, diameter 24 inches, depth 14.4 feet. Measuring point, top of casing, 0.8 foot above land surface and 9.54 feet above datum. Water level Feb. 9, 1935, 9.54 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 9, 1935	100.29	Sept. 4, 1935	102.65	Mar. 17, 1936	105.14
Apr. 8	100.42	Oct. 8	101.80	May 20	103.47
May 24	103.96	Nov. 11	102.54	July 7	101.61
July 2	103.53	Dec. 17	103.78	29	99.77
31	102.56	Jan. 4, 1936	103.46	Oct. 16	97.15

Scotts Bluff County

240. O. Juergens, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 22 N., R. 53 W. Drilled irrigation well, diameter 24 inches, depth 50.6 feet. Measuring point, top of casing, 1.0 foot below land surface and 119.98 feet above datum. Water level Oct. 13, 1934, 19.98 feet below measuring point.

Oct. 13, 1934	100.00	Aug. 20, 1935	99.83	Mar. 31, 1936	95.94
Nov. 20	100.63	Sept. 12	100.24	June 8	95.77
Jan. 9, 1935	99.88	Oct. 25	99.63	Aug. 7	98.26
Mar. 4	98.90	Nov. 29	98.84	28	99.57
Apr. 25	97.97	Jan. 2, 1936	98.00	Nov. 30	100.00
June 14	97.20	21	97.58	Dec. 15	99.64
July 18	98.65				

353. University of Nebraska, sec. 33, T. 23 N., R. 56 W. Driven well, diameter 1 inch, depth 14.6 feet. Measuring point, top of pipe, 1.5 feet above land surface and 104.11 feet above datum. Water level Oct. 26, 1935, 5.74 feet below measuring point.

Oct. 26, 1935	98.37	Jan. 22, 1936	100.23	Aug. 7, 1936	99.66
Nov. 29	100.26	Mar. 31	100.09	28	99.50
Jan. 2, 1936	100.33	June 9	100.72	Nov. 30	100.47

398. W. Chapman, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 23 N., R. 57 W. Drilled well, diameter 6 inches, depth 44.5 feet. Measuring point, top of casing, 0.9 foot above land surface and 137.41 feet above datum. Water level Jan. 2, 1936, 37.19 feet below measuring point.

Jan. 2, 1936	100.22	June 9, 1936	99.74	Aug. 28, 1936	100.92
22	99.90	Aug. 7	100.68	Nov. 30	99.86
Mar. 31	99.07				

Seward County

171. Kilpatrick estate, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 11 N., R. 3 E. Bored well, diameter 12 inches, depth 36.9 feet. Measuring point, edge of hole in sheet metal cover, 1.0 foot above land surface and 128.07 feet above datum. Water level Oct. 5, 1934, 28.58 feet below measuring point.

Oct. 5, 1934	99.49	July 25, 1935	100.47	Jan. 29, 1936	100.42
Dec. 5	99.99	Aug. 29	99.99	Apr. 6	100.77
Jan. 24, 1935	100.00	Oct. 1	100.23	June 16	100.20
Mar. 16	100.15	Nov. 1	100.37	Sept. 23	98.73
May 15	100.04	Dec. 7	100.46	Dec. 20	99.58
June 30	100.86	Jan. 9, 1936	100.42		

172. W. Langworthy, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 11 N., R. 2 E. Bored well, diameter 12 inches, depth 24 feet. Measuring point, top of iron plate, 1.2 feet above land surface and 108.88 feet above datum. Water level Oct. 5, 1934, 10.05 feet below measuring point.

Oct. 5, 1934	98.83	May 15, 1935	100.28	Oct. 1, 1935	98.95
Dec. 5	99.90	June 30	100.49	Nov. 1	99.88
Jan. 24	100.09	July 25	99.35	Dec. 7	100.44
Mar. 16, 1935	100.37	Aug. 29	99.07	Jan. 9, 1936	100.58

Seward County--Continued

172. W. Langworthy.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 29, 1936	100.60	June 16, 1936	100.01	Sept. 23, 1936	98.33
Apr. 6	101.10	Aug. 14	98.35	Dec. 20	100.14

Sheridan County

82. W. Wightman, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 24 N., R. 43 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 38.1 feet. Measuring point, top of pipe tee, 0.9 foot above land surface and 104.38 feet above datum. Water level Aug. 29, 1934, 4.65 feet below measuring point.

Aug. 29, 1934	99.73	July 15, 1935	100.64	Jan. 18, 1936	100.17
Nov. 12	99.93	Aug. 15	100.11	June 3	100.09
Jan. 5, 1935	100.00	Sept. 16	99.99	July 21	99.30
Feb. 26	100.05	Oct. 23	99.95	Aug. 27	99.13
Apr. 20	100.31	Nov. 26	100.19	Nov. 24	99.42
June 8	100.89	Dec. 30	100.17		

120. C. Johnson, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 31 N., R. 46 W. Drilled well, diameter 4 inches, depth 70.4 feet. Measuring point, top of pump base, 0.8 foot above land surface and 151.19 feet above datum. Water level Aug. 26, 1934, 51.03 feet below measuring point.

Aug. 26, 1934	100.16	July 13, 1935	100.02	Jan. 16, 1936	100.02
Nov. 9	99.92	Aug. 13	100.09	Mar. 26	99.94
Jan. 3, 1935	100.01	Sept. 13	100.02	June 1	99.99
Feb. 24	99.85	Oct. 21	99.92	July 20	99.79
Apr. 18	99.92	Nov. 23	99.98	Sept. 12	99.63
June 6	99.91	Dec. 27	100.01	Nov. 21	99.67

217. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 24 N., R. 41 W. Driven well, diameter 1 inch, depth 13.2 feet. Measuring point, top of pipe, 1.0 foot above land surface and 107.73 feet above datum. Water level Dec. 18, 1934, 7.78 feet below measuring point.

Dec. 18, 1934	99.95	Aug. 15, 1935	100.09	Mar. 27, 1936	100.35
Jan. 5, 1935	100.01	Sept. 16	99.90	June 3	100.32
Feb. 26	100.17	Oct. 23	99.73	July 21	99.20
Apr. 20	100.48	Nov. 26	99.86	Aug. 27	98.81
June 8	101.21	Dec. 30	99.96	Nov. 24	98.92
July 15	100.73	Jan. 18, 1936	100.00		

376. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 10, T. 31 N., R. 44 W. Driven well, diameter 1 inch, depth 12.3 feet. Measuring point, top of pipe, 1.1 feet above land surface and 104.92 feet above datum. Water level Nov. 23, 1935, 4.85 feet below measuring point.

Nov. 23, 1935	100.07	Mar. 26, 1936	101.00	Sept. 12, 1936	98.68
Dec. 27	100.29	June 1	100.15	Nov. 21	99.62
Jan. 16, 1936	100.45	July 20	100.05		

379. University of Nebraska, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 24 N., R. 45 W. Driven well, diameter 1 inch, depth 11.5 feet. Measuring point, top of pipe, 2.0 feet above land surface and 105.23 feet above datum. Water level Nov. 26, 1935, 5.06 feet below measuring point.

Nov. 26, 1935	100.17	Mar. 27, 1936	100.83	Aug. 27, 1936	98.73
Dec. 30	100.32	June 3	100.87	Nov. 24	99.51
Jan. 18, 1936	100.40	July 21	98.98		

Sherman County

58. J. Kociemba, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 15 N., R. 15 W. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 26 feet. Measuring point, top of pipe, 0.6 foot above land surface and 107.10 feet above datum. Water level Aug. 11, 1934, 7.75 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 11, 1934	99.35	July 9, 1935	100.17	Jan. 11, 1936	100.08
Nov. 5	99.57	Aug. 8	99.16	Mar. 23	100.59
Dec. 28	99.99	Sept. 10	99.20	May 28	100.03
Feb. 20, 1935	100.25	Oct. 15	99.18	July 14	98.81
Apr. 15	100.34	Nov. 19	99.55	Sept. 15	98.36
June 10	100.83	Dec. 22	99.89	Nov. 4	98.94

Sioux County

80. J. Carnahan, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 34 N., R. 53 W. Dug well, diameter 60 inches, depth 31.7 feet. Measuring point, top of wooden platform, 0.3 foot above land surface and 115.57 feet above datum. Water level Aug. 28, 1934, 15.83 feet below measuring point.

Aug. 28, 1934	99.74	June 7, 1935	100.53	Nov. 23, 1935	101.41
Nov. 10	99.93	July 14	100.62	Dec. 28	101.35
Jan. 4, 1935	100.01	Aug. 14	101.34	Jan. 17, 1936	101.22
Feb. 25	99.73	Sept. 14	101.47	Mar. 26	101.00
Apr. 19	99.75	Oct. 22	101.40	July 21	100.83

81. J. Cook, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 29 N., R. 55 W. Drilled well, diameter 6 inches, depth 195.3 feet. Measuring point, top of iron plate, 0.3 foot above land surface and 274.93 feet above datum. Water level Aug. 28, 1934, 174.76 feet below measuring point.

Aug. 28, 1934	100.17	July 14, 1935	100.05	Jan. 17, 1936	99.74
Nov. 10	99.90	Aug. 14	100.04	Mar. 26	99.97
Jan. 4, 1935	100.00	Sept. 14	99.87	June 2	99.63
Feb. 25	100.01	Oct. 22	99.73	July 20	99.92
Apr. 19	100.05	Nov. 25	99.85	Sept. 11	99.78
June 7	100.12	Dec. 28	99.92	Nov. 22	99.84

125. Village of Harrison, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 10, T. 31 N., R. 56 W. Drilled well, diameter 8 inches, depth 243.2 feet. Measuring point, top of iron plate, 0.5 foot above land surface and 272.54 feet above datum. Water level Aug. 26, 1934, 172.44 feet below measuring point.

Aug. 26, 1934	100.10	July 14, 1935	99.97	Jan. 17, 1936	99.95
Nov. 10	99.84	Aug. 14	100.35	Mar. 26	100.15
Jan. 4, 1935	100.01	Sept. 14	100.04	June 2	100.01
Feb. 25	100.01	Oct. 22	99.72	July 20	100.00
Apr. 19	100.08	Nov. 25	99.82	Sept. 11	100.13
June 7	100.19	Dec. 28	100.14	Nov. 22	100.21

239. Trout & Bright, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 24 N., R. 57 W. Drilled irrigation well, diameter 24 inches, depth 59.6 feet. Measuring point, top of casing, 0.3 foot above land surface and 133.23 feet above datum. Water level June 14, 1935, 33.35 feet below measuring point.

June 14, 1935	99.88	Jan. 2, 1936	100.21	June 9, 1936	98.68
July 18	99.99	22	99.93	Nov. 30	99.67
Oct. 26	99.94	Mar. 31	99.01	Dec. 9	99.63
Nov. 29	99.58				

337. W. Walker, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 15, T. 24 N., R. 56 W. Drilled well, diameter 6 inches, depth 45.5 feet. Measuring point, top of casing, 0.2 foot above land surface and 127.99 feet above datum. Water level Jan. 2, 1936, 27.43 feet below measuring point.

Jan. 2, 1936	100.56	June 9, 1936	106.75	Aug. 28, 1936	110.65
22	99.81	Aug. 7	109.11	Nov. 30	102.82
Mar. 31	97.48				

Sioux County--Continued

377. University of Nebraska, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 6, T. 28 N., R. 55 W. Driven well, diameter 1 inch, depth 13 feet. Measuring point, top of pipe, 2.0 feet above land surface and 106.62 feet above datum. Water level Nov. 25, 1935, 6.23 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 25, 1935	100.39	Mar. 26, 1936	100.47	Sept. 11, 1936	100.23
Dec. 28	100.34	June 2	100.33	Nov. 22	100.40
Jan. 17, 1936	100.28	July 20	99.82		

Stanton County

208. University of Nebraska, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 23 N., R. 3 W. Drilled well, diameter 1 inch, depth 16.8 feet. Measuring point, top of pipe, 1.0 foot above land surface and 108.29 feet above datum. Water level Dec. 31, 1934, 8.31 feet below measuring point.

Dec. 31, 1934	99.98	Sept. 7, 1935	99.19	Mar. 20, 1936	100.11
Feb. 14, 1935	101.02	Oct. 11	99.13	May 26	99.50
Apr. 12	100.20	Nov. 16	99.51	July 11	98.24
May 29	101.37	Dec. 20	99.24	Aug. 3	97.97
July 6	99.84	Jan. 9, 1936	100.35	Oct. 28	98.66
Aug. 5	99.53				

Thayer County

166. H. Eggert, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 3 N., R. 2 W. Drilled well, diameter 6 inches, depth to pump cylinder, 106.9 feet. Measuring point, top of steel plate, 0.7 foot above land surface and 205.95 feet above datum. Water level Oct. 2, 1934, 105.88 feet below measuring point.

Oct. 2, 1934	100.07	July 25, 1935	99.91	Jan. 28, 1936	99.87
Dec. 3	100.05	Aug. 28	100.01	June 16	99.82
Jan. 22, 1935	99.97	Oct. 1	99.86	Aug. 14	99.83
Mar. 15	100.03	Nov. 1	99.88	Sept. 23	99.80
May 14	99.91	Dec. 7	99.86	Dec. 16	99.75
June 26	99.96	Jan. 8, 1936	99.90		

187. L. Williams, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T. 4 N., R. 4 W. Drilled well, diameter 10 inches, depth 72.5 feet. Measuring point, top of iron plate, 0.3 foot above land surface and 169.47 feet above datum. Water level Sept. 29, 1934, 69.43 feet below measuring point.

Sept. 29, 1934	100.04	July 24, 1935	99.84	Jan. 28, 1936	99.78
Dec. 2	100.02	Aug. 27	99.85	Apr. 5	99.73
Jan. 22, 1935	99.99	Sept. 30	99.79	June 15	99.68
Mar. 15	99.97	Oct. 31	99.78	Aug. 13	99.71
May 13	99.91	Dec. 6	99.76	Sept. 22	99.72
June 27	99.86	Jan. 8, 1936	99.80	Dec. 17	99.58

Thomas County

212. University of Nebraska, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 23 N., R. 28 W. Driven well, diameter 1 inch, depth 21.8 feet. Measuring point, top of pipe, 1.6 feet above land surface and 112.10 feet above datum. Water level Dec. 16, 1934, 12.13 feet below measuring point.

Dec. 16, 1934	99.97	Aug. 15, 1935	99.90	Mar. 27, 1936	100.15
Jan. 7, 1935	100.00	Sept. 16	99.87	June 3	100.08
Feb. 26	100.05	Oct. 23	99.94	July 21	99.64
Apr. 20	100.14	Nov. 26	100.01	Aug. 26	99.70
June 8	100.71	Dec. 30	100.04	Nov. 24	99.98
July 15	100.17	Jan. 18, 1936	100.01		

Thomas County--Continued

213. University of Nebraska, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 24 N., R. 30 W. Driven well, diameter 1 inch, depth 12.6 feet. Measuring point, top of pipe, 2.5 feet above land surface and 105.06 feet above datum. Water level Dec. 19, 1934, 5.02 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 19, 1934	100.04	Aug. 15, 1935	99.49	Mar. 27, 1936	100.23
Jan. 7, 1935	99.96	Sept. 16	99.81	June 3	100.00
Feb. 26	100.01	Oct. 23	99.62	July 21	99.55
Apr. 20	100.10	Nov. 26	99.86	Aug. 26	99.54
June 8	100.04	Dec. 30	100.08	Nov. 24	100.02
July 15	99.69	Jan. 18, 1936	100.02		

Thurston County

60. S. French, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 25 N., R. 6 E. Driven well, diameter 1 $\frac{1}{4}$ inches, depth 19.4 feet. Measuring point, top of pipe, 2.3 feet above land surface and 113.31 feet above datum. Water level Aug. 13, 1934, 14.14 feet below measuring point.

Aug. 13, 1934	99.17	July 5, 1935	99.98	Jan. 7, 1936	99.84
Oct. 30	99.25	Aug. 3	101.16	Mar. 19	100.82
Dec. 15	99.61	Sept. 6	99.48	May 25	100.07
Feb. 12, 1935	100.96	Oct. 10	99.33	July 9	99.37
Apr. 10	99.82	Nov. 15	99.31	Aug. 1	99.16
May 27	100.27	Dec. 19	99.49	Oct. 25	99.10

102. W. Decora, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 26 N., R. 5 E. Dug well, diameter 15 inches, depth 26.9 feet. Measuring point, top of casing, 1.5 feet above land surface and 120.10 feet above datum. Water level Aug. 13, 1934, 19.74 feet below land surface.

Aug. 13, 1934	100.36	May 28, 1935	96.99	Dec. 19, 1935	96.32
Oct. 30	100.58	July 6	95.49	May 25, 1936	95.26
Dec. 17	100.17	Aug. 3	98.56	July 10	95.41
Feb. 12, 1935	99.52	Sept. 6	96.77	Aug. 3	94.56
Apr. 11	97.43	Oct. 10	95.89		

103. D. Leap, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 26 N., R. 8 E. Dug well, diameter 36 inches, depth 14.9 feet. Measuring point, top of wooden platform, 1.3 feet above land surface and 111.33 feet above datum. Water level Aug. 13, 1934, 13.39 feet below measuring point.

Aug. 13, 1934	97.94	July 6, 1935	99.45	Jan. 8, 1936	99.88
Oct. 30	99.06	Aug. 3	98.28	Mar. 20	100.49
Dec. 17	99.91	Sept. 6	98.06	May 25	99.84
Feb. 13, 1935	100.25	Oct. 11	98.17	July 10	97.78
Apr. 11	100.49	Nov. 16	99.28	Aug. 1	96.66
May 28	100.71	Dec. 19	99.67	Oct. 25	97.82

Valley County

54. E. Esterbrook, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26, T. 17 N., R. 16 W. Drilled irrigation well, diameter 6 inches, depth 22.7 feet. Measuring point, top of casing, 0.6 foot above land surface and 109.48 feet above datum. Water level Aug. 9, 1934, 10.61 feet below measuring point.

Aug. 9, 1934	98.87	July 10, 1935	101.48	Jan. 11, 1936	101.24
Nov. 5	99.63	Aug. 8	100.23	Mar. 23	101.84
Dec. 28	99.96	Sept. 10	101.51	May 28	101.57
Feb. 20, 1935	100.55	Oct. 15	101.01	July 15	100.58
Apr. 15	100.68	Nov. 19	100.82	Sept. 15	99.87
June 10	101.60	Dec. 22	101.06	Nov. 5	100.26

Valley County--Continued

56. C. Verzal, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T. 19 N., R. 14 W. Drilled irrigation well, diameter 24 inches, depth 96.7 feet. Measuring point, top of pump base, 0.4 foot below land surface and 135.45 feet above datum. Water level Aug. 10, 1934, 37.50 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 10, 1934	97.95	July 10, 1935	100.26	Jan. 12, 1936	100.30
Nov. 6	99.85	Aug. 9	99.79	Mar. 24	100.28
Dec. 29	99.99	Sept. 11	100.08	May 29	100.31
Feb. 20, 1935	100.08	Oct. 16	100.23	July 15	100.05
Apr. 15	100.14	Nov. 20	100.29	Sept. 15	99.50
June 11	100.20	Dec. 22	100.28	Nov. 6	99.73

57. I. Manchester, SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 18 N., R. 13 W. Drilled irrigation well, diameter 24 inches, depth 82.9 feet. Measuring point, top of casing, flush with land surface and 122.57 feet above datum. Water level Aug. 10, 1934, 23.08 feet below measuring point.

Aug. 10, 1934	99.49	July 10, 1935	100.22	Jan. 12, 1936	100.16
Nov. 6	100.02	Sept. 11	99.83	Mar. 24	100.09
Dec. 29	100.00	Oct. 16	100.01	May 29	100.07
Feb. 21, 1935	99.97	Nov. 20	100.17	Sept. 15	99.51
Apr. 16	99.97	Dec. 22	100.16	Nov. 6	99.70
June 11	100.06				

Washington County

32. A. Matzen, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 17 N., R. 11 E. Dug well, diameter 40 inches, depth 13.7 feet. Measuring point, top of wooden platform, 1.0 foot above land surface and 109.42 feet above datum. Water level Aug. 1, 1934, 9.84 feet below measuring point.

Aug. 1, 1934	99.58	July 3, 1935	100.56	Jan. 6, 1936	98.37
Oct. 29	100.09	Aug. 1	98.65	Mar. 18	100.62
Dec. 15	100.16	Sept. 5	99.11	May 21	100.56
Feb. 11, 1935	99.60	Oct. 9	98.56	July 8	100.22
Apr. 9	100.44	Nov. 14	98.47	30	99.52
May 25	100.52	Dec. 18	97.90	Oct. 20	99.19

33. E. Jensen, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 18 N., R. 11 E. Dug well, diameter 40 inches, depth 35.9 feet. Measuring point, top of wooden platform, 1.0 foot above land surface and 129.26 feet above datum. Water level Aug. 1, 1934, 29.29 feet below measuring point.

Aug. 1, 1934	99.97	July 3, 1935	98.69	Jan. 6, 1936	98.93
Oct. 29	99.06	Aug. 1	98.34	Mar. 18	100.63
Dec. 15	100.02	Sept. 5	98.26	May 21	99.56
Feb. 11, 1935	99.95	Oct. 9	98.75	July 8	98.85
Apr. 9	99.90	Nov. 14	98.88	30	98.59
May 25	99.76	Dec. 18	98.92	Oct. 20	98.41

Wayne County

100. W. Andrews, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 26 N., R. 3 E. Dug well, diameter 30 inches, depth 40 feet. Measuring point, top of brick curb, 1.3 feet above land surface and 131.71 feet above datum. Water level Aug. 13, 1934, 30.96 feet below measuring point.

Aug. 13, 1934	100.75	July 6, 1935	101.05	Jan. 7, 1936	99.69
Oct. 31	100.17	Aug. 5	100.72	Mar. 20	100.74
Dec. 18	100.02	Sept. 7	100.56	May 26	101.18
Feb. 12, 1935	99.95	Oct. 11	100.16	July 11	100.73
Apr. 12	100.01	Nov. 16	99.89	Aug. 3	100.24
May 29	100.81	Dec. 20	99.71	Oct. 27	99.41

Wayne County--Continued

101. W. Tahm, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 25 N., R. 2 E. Dug well, diameter 30 inches, depth 40.9 feet. Measuring point, top of wood platform, 1.0 foot above land surface and 138.99 feet above datum. Water level Aug. 11, 1934, 39.10 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 11, 1934	99.89	July 6, 1935	101.39	Jan. 9, 1936	99.72
Oct. 31	99.83	Aug. 5	100.43	Mar. 20	100.48
Dec. 19	99.89	Sept. 7	99.51	May 26	101.21
Feb. 14, 1935	100.37	Oct. 11	99.02	July 11	100.04
Apr. 12	101.00	Nov. 16	99.21	Aug. 3	99.06
May 29	101.70	Dec. 20	99.53	Oct. 27	98.29

Webster County

161. R. Adams, NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 3 N., R. 10 W. Drilled well, diameter 6 inches, depth 39.5 feet. Measuring point, top of pipe, 0.8 foot above land surface and 135.96 feet above datum. Water level Oct. 2, 1934, 35.98 feet below measuring point.

Oct. 2, 1934	99.98	July 23, 1935	99.60	Jan. 27, 1936	99.47
Nov. 30	100.25	Aug. 26	99.50	Apr. 4	99.65
Jan. 19, 1935	99.86	Sept. 27	99.43	June 14	99.36
Mar. 13	99.76	Oct. 30	99.49	Aug. 12	99.34
May 12	99.65	Dec. 5	99.69	21	99.30
June 21	99.63	Jan. 7, 1936	99.45	Dec. 12	99.21

162. H. Somerhalder, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T. 2 N., R. 10 W. Drilled irrigation well, diameter 60 inches, depth 35.4 feet. Measuring point, top of wood curb, 0.9 foot below land surface and 124.92 feet above datum. Water level Oct. 2, 1934, 25.08 feet below measuring point.

Oct. 2, 1934	99.84	July 23, 1935	100.00	Jan. 27, 1936	100.04
Nov. 30	99.95	Aug. 26	99.79	Apr. 4	100.10
Jan. 19, 1935	100.02	Sept. 27	99.85	June 14	100.01
Mar. 13	100.11	Oct. 30	99.93	Aug. 21	99.62
May 12	100.06	Dec. 5	99.98	Dec. 12	99.87
June 22	100.17	Jan. 7, 1936	100.04		

163. H. Pedersen, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T. 2 N., R. 9 W. Drilled irrigation well. Measuring point, top of wood curb, 5 feet below land surface and 111.12 feet above datum. Water level Oct. 2, 1934, 10.96 feet below measuring point.

Oct. 2, 1934	100.16	Aug. 26, 1935	100.27	Apr. 4, 1936	100.34
Nov. 30	100.04	Sept. 27	100.59	June 14	99.87
Jan. 19, 1935	99.98	Oct. 30	100.52	Aug. 12	99.36
Mar. 13	100.07	Dec. 5	100.40	21	99.31
May 12	99.96	Jan. 7, 1936	100.32	Dec. 12	99.32
June 22	100.91	27	100.26		

Wheeler County

204. University of Nebraska, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 23 N., R. 11 W. Driven well, diameter 1 inch, depth 16.3 feet. Measuring point, top of pipe, 1.5 feet above land surface and 105.79 feet above datum. Water level Jan. 1, 1935, 5.79 feet below measuring point.

Jan. 1, 1935	100.00	Sept. 12, 1935	100.27	Mar. 24, 1936	101.51
Feb. 21	100.67	Oct. 17	99.81	May 30	101.18
Apr. 16	101.21	Nov. 21	99.98	July 16	98.97
June 3	102.60	Dec. 23	100.41	Sept. 14	98.81
July 11	100.89	Jan. 12, 1936	100.48	Nov. 7	99.31
Aug. 9	99.84				

Wheeler County--Continued

205. University of Nebraska, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 21 N., R. 12 W. Driven well, diameter 1 inch, depth 17.2 feet. Measuring point, top of pipe, 1.4 feet above land surface and 106.05 feet above datum. Water level Jan. 1, 1935, 6.05 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 1, 1935	100.00	Sept. 11, 1935	99.96	Mar. 24, 1936	100.92
Feb. 21	100.17	Oct. 17	100.00	May 30	100.66
Apr. 16	100.43	Nov. 21	100.21	July 16	99.59
July 11	100.81	Dec. 23	100.31	Sept. 14	99.16
Aug. 9	99.65	Jan. 12, 1936	100.43	Nov. 7	99.76

York County

167. H. Moore, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 32, T. 11 N., R. 3 W. Drilled irrigation well, diameter 9 inches, depth 88.5 feet. Measuring point, top of casing, 1.0 foot above land surface and 162.26 feet above datum. Water level Oct. 4, 1934, 62.27 feet below measuring point.

Oct. 4, 1934	99.99	July 24, 1935	100.24	Apr. 5, 1936	100.21
Dec. 5	99.99	Aug. 26	100.26	June 15	100.25
Jan. 24, 1935	100.00	Sept. 27	100.20	Aug. 13	100.09
Mar. 16	99.97	Oct. 31	100.15	Sept. 22	100.02
May 15	100.00	Dec. 5	100.20	Dec. 16	99.90
June 30	100.23	Jan. 8, 1936	100.21		

225. C. Miller, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 15, T. 19 N., R. 2 W. Drilled irrigation well, diameter 24 inches, depth 42.5 feet. Measuring point, top of steel beam, 0.6 foot above land surface and 126.42 feet above datum. Water level Oct. 6, 1934, 26.69 feet below measuring point.

Oct. 6, 1934	99.73	Aug. 27, 1935	100.42	Apr. 5, 1936	100.53
Dec. 5	99.89	Sept. 30	100.35	June 15	100.31
Jan. 24, 1935	100.09	Oct. 31	100.24	Aug. 13	99.83
Mar. 16	100.17	Dec. 6	100.28	22	99.80
June 30	100.97	Jan. 8, 1936	100.29	Dec. 16	99.89
July 24	100.76	28	100.32		

NEW JERSEY

By Henry C. Barksdale

Ground-water areas in the State

New Jersey contains within its boundaries parts of four of the twenty-one major ground-water provinces into which Meinzer^{1/} has divided the United States. The southeastern part of the State, considerably more than one-half of its area, lies in the Atlantic Coastal Plain province, and a large majority of the important ground-water supplies in the State are drawn from the sand and gravel of this area. Next in importance is the Northeastern Drift province, which covers the northern third of the State and in which several important ground-water supplies are found. Much smaller portions of the State lie within the Piedmont province and the Blue Ridge-Appalachian Valley province, and no very large water supplies are drawn from the rocks of these areas.

Most of the water-level measurements in New Jersey have been made in connection with quantitative ground-water investigations, carried on by the United States Geological Survey in cooperation with the New Jersey Water Policy Commission. For reasons of efficiency and economy, this work has been concentrated chiefly in six regions or areas, which are considered typical of other parts of the State or in which critical ground-water problems exist. These six areas are the Atlantic City, Camden, Asbury Park, Runyon, Canoe Brook, and East Paterson regions. The following is a brief description of the conditions in each of these regions:

Atlantic City region.--The Atlantic City region lies within the Atlantic Coastal Plain province. The principal ground-water supplies are obtained from the unconsolidated sands of the Kirkwood and Cohansey formations, of Tertiary age. Practically all the wells measured in this area are artesian and are affected by heavy withdrawals of water. The fluctuations of water level in the wells in this area are caused principally by the fluctuations of pumpage from the different sands. In some wells near the shore part of the fluctuation is caused by the loading and unloading of the surface as the tide rises and falls.

^{1/} Meinzer, O. E., The occurrence of ground water in the United States: U. S. Geol. Survey Water-Supply Paper 489, pp. 309-314, 1923.

The types of daily fluctuation produced by various combinations of tidal and pumping effects are discussed and illustrated in the report on this area published during the year.^{2/} For the purpose of studying the fluctuations of water level over long periods the daily fluctuations are smoothed out either by graphic methods or by computing daily averages, as is done with the record from the 14th Avenue well, Longport, for which detailed records are given later in this report.

Camden region.--The Camden region is in the Atlantic Coastal Plain province. All the wells measured in this region are artesian, and all are affected by pumping. The principal ground-water supplies in this region are drawn from unconsolidated sands of the Raritan formation, of Cretaceous age. Water levels in test well 3, at the Morris station of the Camden waterworks, are given in the following pages. These water levels were obtained by means of a water-stage recorder, which has been in operation on this well since 1924. The fluctuations of water level in this well, which are sometimes wide and rapid, are caused principally by changes in the rate of pumping at this station and by changes in the distribution of the pumping among the various wells in the field, but there are also some indications of tidal effect. A hydrograph showing the lowest water level in this well each day from 1924 to 1927, together with some related factors, was published in Thompson's report on this region.^{3/}

Asbury Park region.--The Asbury Park region is also in the Atlantic Coastal Plain province. All the wells observed in this region are artesian, and all are affected by pumping. The principal water supplies are drawn from the sands of the Raritan, Englishtown, and Mount Laurel-Wenonah formations, which occur at depths of approximately 1,100, 600, and 450 feet, respectively. All these formations are of Cretaceous age.

Runyon region.--Like the three regions described above, the Runyon region is in the Atlantic Coastal Plain province. The principal ground water supplies are derived from two members of the Raritan formation, the so-called No. 1 and No. 3 sands. Most of the wells measured are water-table wells, and a considerable number of them are not affected by heavy artificial withdrawals of water. In this region the water in the No. 1 sand is under artesian pressure, but the No. 3 sand contains water

^{2/} Barksdale, H. C., Sundstrom, R. W., and Brunstein, M. S., Supplementary report on the ground-water supplies of the Atlantic City region: State Water Policy Comm. Special Rept. 6, pp. 92-96, 1936.

^{3/} Thompson, D. G., Ground-water supplies of the Camden area: New Jersey Dept. Cons. and Devel. Bull. 39, opposite p. 64, 1932.

under water-table conditions. The wells tapping the No. 1 sand are all affected by heavy pumping and fluctuate widely and rapidly with the changes in the rate of pumping. Most of the observation wells in the No. 3 sand are also affected by pumping, but the fluctuations in them are not generally rapid. Most of the Runyon test wells are affected by pumping. The Runyon farm wells and a few others, such as the Morrell and Hulsart wells, are not affected by pumping or are affected only by very small withdrawals of water for household use.

Canoe Brook region.--The Canoe Brook region is an irregular area north of the city of Summit and is within the Northeastern Drift province. The principal ground-water supplies are obtained from glacial drift, and a few wells draw water from interbedded sandstone and shale of Triassic age. Most of the wells measured in this area are artesian, and all of them are affected by heavy artificial withdrawals of water. The fluctuations of water level are caused primarily by fluctuations of pumpage and are frequently wide and rapid.

East Paterson region.--The East Paterson region is also in the Northeastern Drift province. Its principal ground-water supplies are drawn from sandstone of Triassic age. Most of the wells in the region are artesian, and all that have been measured are affected by pumping to some extent. In some of them the fluctuations are wide and rapid. In one observation well fluctuations of 25 feet in a day are not unusual.

Availability of records of water levels

Information on water levels in New Jersey has been published from time to time since 1868. The titles of the publications in which such information may be found are listed below. Two reports and one short paper containing information about water levels in New Jersey, listed below as 8, 9, and 10, were published in 1936.

1. Cook, G. H., The geology of New Jersey, pp. 701-708, 1868.
2. The annual reports of the State geologist.
3. Thompson, D. G., Ground-water supplies of the Atlantic City region: New Jersey Dept. Cons. and Devel. Bull. 30, 1928.
4. Thompson, D. G., Ground-water supplies in the vicinity of Asbury Park: New Jersey Dept. Cons. and Devel. Bull. 35, 1932.
5. Thompson, D. G., Ground-water supplies of the Passaic River Valley near Chatham, N. J.: New Jersey Dept. Cons. and Devel. Bull. 38, 1932.
6. Thompson, D. G., Ground-water supplies of the Camden area, N. J.: New Jersey Dept. Cons. and Devel. Bull. 39, 1932.
7. Barksdale, H. C., A 10-year record of water-table fluctuations near Runyon, N. J.: Am. Geophys. Union Trans. 14th Ann. Meeting, pp. 466-471, 1933.
8. Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 95-105, 1936.
9. Barksdale, H. C., Sundstrom, R. W., and Brunstein, M. S., Supplementary report on the ground-water supplies of the Atlantic City region, N. J.: State Water Policy Commission Special Rept. 6, 1936. This report contains numerous records and hydrographs of water levels in wells in the area, analyses of the relation of

- pumpage to water levels, and a study of the problem of salt-water intrusion from the ocean.
10. Critchlow, H. T., and Barksdale, H. C., A long-term record of water-level fluctuations at Plainfield, New Jersey: Am. Geophys. Union Trans. 17th Ann. Meeting, pp. 361-363, 1936. This paper describes the record of water levels in a well at the Netherwood station of the Plainfield Union Water Co., which has been measured regularly since 1891. This 44-year record is believed to be the longest continuous record of water levels in the United States, although it is by no means the earliest series of measurements.

The unpublished water-level records obtained during the New Jersey quantitative ground-water investigations are filed at the office of the State Water Policy Commission in Trenton. Practically all of them are available for inspection by anyone interested. Some of the more significant records from each of the regions under study have been summarized on hydrographs, which can be blueprinted for distribution.

Water-level work in 1936

A total of 5,821 measurements of water level in wells were made in New Jersey in 1936 in connection with the cooperative ground-water investigation that is being carried on between the United States Geological Survey and the New Jersey State Water Policy Commission. Measurements were made at least once in 143 wells, and of this number 135 were measured more than once. Five wells were measured daily or at more frequent intervals by local observers. About 75 wells in the Runyon region were measured monthly by a local observer. The remaining wells were measured by the regular staff.

Water-stage recorders were maintained on 37 wells during the year. Of this number 34 were owned by the United States Geological Survey or by the State Water Policy Commission and 3 were owned by water companies or by private industries. Eight water-stage recorders were installed on wells during the year.

In the following tables of water-level measurements, an attempt has been made to give the record for one or more wells in each of the six principal regions under study and to give the complete record for each well reported. This has, of course, involved reporting the water-level measurements made prior to 1936 for each well. For the wells reported in Water-Supply Paper 777, the measurements made in 1935 have been repeated in order that the present record may be complete.

For most of the wells measured in New Jersey, the altitude of the reference points above mean sea level has been determined, and the altitude of the reference points at most of the remaining wells will probably be determined as the investigation proceeds. If the altitude of

the reference point of a well has been determined by instrumental leveling, the water levels in the well are given in feet referred to mean sea level. For those wells for which the altitude of reference point has not yet been determined, the water levels are reported in feet below the reference point, so that they may be converted into altitudes above sea level as soon as the altitude of the reference point has been determined.

For wells equipped with water-stage recorders it was necessary to decide arbitrarily how much of the record to report, as it is obviously impossible to report a continuous record in tabular form. The plan adopted for such wells was to report monthly figures for the years prior to 1936 and weekly figures for 1936. Neither the lowest nor the highest water level in the period is truly representative of the behavior of the water table or of the artesian pressure in a given basin, because they too often represent the least or most favorable possible combination of conditions immediately surrounding the observation well and not the average condition in the aquifer. For wells in which the water-level fluctuations are wide and rapid, the highest and lowest water level for each month or week are reported without attempting to fix upon a single representative figure. For wells in which the fluctuations are small or gradual, the water level at definite times is reported.

On wells that have not been equipped with water-stage recorders all measurements are reported, except when a considerable number of measurements were made on a single day, when the range, and number of measurements are given.

Longport, 14th Avenue well

Atlantic City region

Well No.: 36.23.1.9.6

Owner: Borough of Longport

Location: At northwest end of 14th Avenue, Longport.

Description: 6-inch well, 803 feet deep, drilled for public water supply in 1895; diameter of screen 4-1/2 inches, length of screen 50 feet; original water temperature 66° F. Log and description in annual report of State geologist, 1895. Pumping discontinued July 22, 1924.

Measuring point: Top of casing, 9.07 feet above mean sea level and about 3.7 feet above land surface.

Benchmark: None. Reference point permanent.

Water-level measurements: Upon completion in 1895 water rose to about 19 feet above mean sea level. (The well flowed 180 gallons a minute at about 5 feet above mean sea level). The operator reported that the water level stood "about sea level" in 1911. Water level 13.00 feet below mean sea level July 22, 1924 (stage of tide not noted). Water-stage recorder installed August 19, 1924.

Daily fluctuation: 3 to 5 feet (tidal).

Highest and lowest daily average water levels in 14th Avenue well
at Longport, N. J., in feet below mean sea level
(From recorder charts)

Month	1924		1925		1926	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	.....	.....	12.06	17.13	29.93	34.83
Feb.	.....	.....	13.93	17.29	29.33	34.23
Mar.	.....	.....	13.41	16.91	30.33	34.43
Apr.	.....	.....	13.69	17.08	30.53	34.23
May	.....	.....	14.23	19.10	31.13	36.53
June	.....	.....	17.66	22.93	33.33	40.33
July	.....	.....	23.46	30.27	28.13	34.03
Aug.	21.56	24.92	27.16	33.91	31.53	37.53
Sept.	19.32	23.85	27.75	34.24	32.43	37.63
Oct.	15.89	22.26	23.60	30.99	28.63	34.43
Nov.	14.82	19.72	21.64	26.59	28.23	32.53
Dec.	13.68	18.19	19.94	24.78	27.33	31.33

Month	1927		1928		1929	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	26.13	30.53	31.53	36.63	34.63	39.13
Feb.	25.93	30.63	30.83	35.33	33.63	37.53
Mar.	.....	.....	29.03	34.43	33.13	37.13
Apr.	30.93	35.33	29.63	34.53	33.33	37.73
May	32.33	36.83	30.93	34.83	34.93	38.53
June	33.73	40.83	32.33	38.53	36.53	42.93
July	40.43	46.23	36.03	41.43	41.03	49.53
Aug.	43.53	47.43	43.53	49.33	47.03	52.23
Sept.	41.63	48.23	41.63	49.13	45.33	54.53
Oct.	36.73	44.13	40.33	46.83	40.43	48.13
Nov.	34.63	39.83	38.03	42.93	36.33	43.23
Dec.	32.63	37.53	36.73	40.53	34.03	40.63

Month	1930		1931		1932	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	32.83	37.33	31.03	35.83	31.63	35.83
Feb.	33.23	37.13	30.43	33.83	30.53	35.23
Mar.	32.03	36.53	29.13	33.73	29.23	34.53
Apr.	42.43	36.43	30.53	35.63	30.83	34.23
May	33.73	39.13	32.23	37.33	31.63	36.23
June	35.93	42.73	34.23	39.63	33.73	39.53
July	40.43	47.73	39.33	47.13	37.63	44.13
Aug.	45.23	49.93	44.93	48.83	42.33	49.23
Sept.	44.03	50.23	44.13	50.43	42.33	49.33
Oct.	38.23	45.43	38.13	46.83	37.23	45.03
Nov.	35.23	40.73	35.33	40.63	33.23	39.43
Dec.	33.23	38.13	33.13	38.53	31.83	36.73

Month	1933		1934		1935	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	30.23	35.33	30.83	34.73	30.03	33.83
Feb.	30.63	34.83	30.43	34.13	29.33	32.73
Mar.	30.03	34.13	30.23	34.63	28.23	32.43
Apr.	29.73	33.53	.....	.....	27.23	31.73
May	31.13	34.93	.....	.....	29.13	34.13
June	33.03	40.93	31.53	40.33	31.03	38.03
July	38.03	45.93	38.23	46.23	36.13	45.13
Aug.	43.23	48.13	43.43	48.23	43.23	48.63
Sept.	42.03	48.63	41.33	48.13	39.53	47.33
Oct.	37.23	44.43	35.53	42.83	34.43	41.53
Nov.	34.43	39.63	32.93	37.93	31.13	36.63
Dec.	32.33	37.03	30.93	35.53	31.03	35.63

Longport, 14th Avenue well--Continued

1936					
Week ending	Highest	Lowest	Week ending	Highest	Lowest
Jan. 4	31.03	35.03	July 4	38.73	41.33
11	31.43	35.03	11	39.53	44.33
18	31.93	34.43	18	42.13	45.83
25	30.93	35.83	25	45.53	46.63
Feb. 1	32.03	35.33	Aug. 1	44.63	47.43
8	31.53	35.03	8	45.33	48.83
15	31.43	34.83	15	46.43	50.53
22	31.93	35.03	22	48.23	51.13
29	32.23	35.53	29	48.33	50.63
Mar. 7	32.43	34.93	Sept. 5	47.33	50.73
14	31.63	34.83	12	48.13	51.23
21	31.23	34.13	19	45.23	50.43
28	30.93	34.63	26	44.13	47.43
Apr. 4	31.23	34.23	Oct. 3	41.63	45.93
11	31.53	34.53	10	40.83	44.33
18	31.43	34.43	17	42.93	43.93
25	31.53	35.03	24	39.23	41.83
May 2	32.63	35.33	31	37.43	41.13
9	33.13	33.73	Nov. 7	37.23	40.43
16	33.53	36.43	14	35.93	39.13
23	33.93	37.63	21	35.93	38.73
30	35.43	38.23	28	34.93	38.03
June 6	37.03	40.13	Dec. 5	34.03	38.03
13	38.23	41.03	12	34.13	36.73
20	36.93	40.23	19	33.53	36.73
27	38.03	41.23	26	32.93	36.73

Morris Station test well

Camden region

Well no.: 31.2.2.5.2 (field no. 3)

Owner: City of Camden

Location: In southwest corner of front lawn of Morris station pumping plant of Camden Water Department, about 50 feet west of Camden & Amboy Railroad.

Description: 6-inch well, 103 feet deep, 10 feet of screen. Equipped with water-stage recorder.

Measuring point: Top of casing, 6.81 feet above mean sea level.

Benchmark: None. Reference point permanent.

Water-level measurements: Water-stage recorder maintained since August 7, 1924. Highest observed water level 0.3 foot below mean sea level March 19, 1936; lowest observed water level 35.84 feet below mean sea level on June 14, 1926.

Altitude of water level in Morris Station test well, in feet below mean sea level at the beginning of the first day of each month (From recorder charts)

Month	1924	1925	1926	1927
Jan.	....	....	17.99	....
Feb.	....	....	17.74	....
Mar.	....	....	17.24	25.3
Apr.	....	....	15.94	22.1
May	....	15.51	17.54	f 21.5
June	....	15.47	c 16.39	g 19.5
July	....	15.79	25.59	23.8
Aug.	a 13.89	15.54	26.54	h 20.1
Sept.	10.69	16.14	d 17.54	i 15.4
Oct.	b 14.97	16.14	e 26.5	12.8
Nov.	....	16.69	24.5	17.2
Dec.	....	16.99	23.3	15.7

Morris Station test well--Continued

Month	1928	1929	1930	1931
Jan.	15.9	13.2	11.1	9.2
Feb.	16.4	10.0	10.0	14.0
Mar.	13.7	14.9	m 15.4	15.1
Apr.	10.2	13.5	10.5	10.9
May	15.1	12.4	13.9	12.6
June	16.7	8.5	12.8	o 9.8
July	....	8.4	n 14.2	11.2
Aug.	13.5	8.5	13.2	10.8
Sept.	8.8	19.1	14.8	10.2
Oct.	10.8	j 13.7	11.5	10.6
Nov.	13.6	k 8.8	8.7	10.2
Dec.	13.0	12.0	11.6	10.6

Month	1932	1933	1934	1935
Jan.	9.4	8.6	7.0	8.1
Feb.	11.0	10.5	7.6	8.3
Mar.	10.7	7.8	...	8.5
Apr.	10.8	7.6	8.3	6.7
May	7.4	5.6	7.9	7.0
June	8.3	5.9	10.0	7.3
July	7.8	6.5	9.6	p 7.0
Aug.	8.0	7.6	8.4	6.8
Sept.	8.5	9.0	10.9	8.0
Oct.	10.2	5.6	10.0	7.4
Nov.	9.2	5.7	9.0	5.2
Dec.	8.2	6.4	7.8	4.5

Date	Water level	Date	Water level	Date	Water level
1936		1936		1936	
Jan. 5	4.3	May 3	2.5	Sept. 6	8.8
12	4.0	10	3.2	13	6.7
19	3.7	17	2.4	20	6.6
26	4.9	24	3.9	27	8.6
Feb. 2	4.7	31	3.4	Oct. 4	6.0
9	5.2	June 7	3.9	9	5.4
16	4.8	14	5.2	18	5.4
23	4.7	21	3.6	Nov. 1	6.6
Mar. 1	4.2	28	4.4	8	5.8
8	3.7	July 5	4.1	13	6.0
15	3.6	12	5.7	22	6.9
22	4.8	19	5.2	29	7.0
29	4.8	26	4.8	Dec. 6	7.2
Apr. 5	3.0	Aug. 16	6.4	13	6.5
12	3.1	23	8.2	20	6.6
19	2.1	30	6.5	27	6.6
26	3.4				

a July 30

c May 29

b September 30

d August 29

e The scale of the recorder in use from this time on does not justify reporting the water levels more closely than to tenths of a foot.

f April 30.

k October 31

g June 2

m February 28

h July 31

n June 30

i August 27

o June 2

j September 30

p June 28

Avon Well

Asbury Park region

Well No.: 29.24.7.1.6 (field no. 1)

Owner: Borough of Avon by the Sea

Location: About 20 feet south of Laird Street and 75 feet east of New York & Long Branch Railroad, in Avon by the Sea.

Description: Drilled well, depth 506 feet, diameter 18 inches; screen 80 feet long and 8 inches in diameter. Completed September 1924. Used for public water supply.

Measuring point: Top of pump base at cooling-water return, 28.77 feet above mean sea level, 3.70 feet above top of casing, and about 0.5 foot above land surface.

Benchmark: Center of east side of cast-iron pump base, 29.23 feet above mean sea level.

Water-level measurements: First measured September 24, 1924. Highest observed water level, 7.04 feet below mean sea level April 17, 1935; lowest observed water level, 132 feet below mean sea level August 4, 1925. This well is used for public water supply. Water levels are usually measured when the well is not being pumped but are affected by the extent of recovery since the last period of pumping and also by the operation of a nearby well that penetrates the same sand.

Altitude of water level in Avon well, in feet below mean sea level

Date	Water level	Date	Water level
<u>1924</u>		<u>1925</u>	
Sept. 24	a 41.43 to 42.01	July 10	70.77
25	b 40.49 to 41.19	11	50.60
29	37.98	11	50.38
Oct. 23	25.58	Aug. 4	132.00
Nov. 11	37.43	5	h 58.89 to 75.59
12	c 37.56 to 62.05	6	57.18
13	d 32.05 to 33.15	6	56.59
19	27.18	27	83.80
19	26.99	27	84.00
Dec. 22	19.65	28	67.64
23	19.57	28	67.48
<u>1925</u>		Sept. 18	76.75
Jan. 6	17.46	19	59.58
16	16.49	19	59.51
19	16.23	Oct. 21	40.78
20	16.04	Dec. 5	26.99
20	15.84	5	26.97
20	15.75		
21	16.19	<u>1926</u>	
21	16.27	Jan. 9	25.63
21	e 27.35 to 96.00	Feb. 12	23.57
22	17.31	Apr. 10	21.38
23	e 18.91 to 19.50	May 26	29.50
Feb. 7	19.61	June 14	48.93
16	21.42	15	27.94
19	f 18.92 to 43.34	July 12	64.27
20	19.58	13	47.80
Mar. 19	22.29	13	64.52
Apr. 1	e 16.06 to 33.47	Aug. 12	60.83
2	g 24.30 to 124.00	20	60.29
3	d 18.44 to 23.58	20	59.99
4	17.47	26	60.87
4	17.43	Sept. 7	below 71.23
28	26.83	8	64.33
28	25.81	17	56.85
29	21.04	18	55.91
29	21.00	Dec. 22	38.42
May 12	27.57		
13	20.30	<u>1927</u>	
June 9	36.45	Apr. 1	19.91
10	32.53		

Avon well--Continued

Date	Water level	Date	Water level
<u>1927</u>		<u>1931</u>	
May 18	35.54	Jan. 8	21.37
18	35.82	Feb. 4	33.75
19	17.93	Mar. 17	15.23
19	17.93	Apr. 15	16.06
June 8	24.16	May 7	17.41
8	24.15	June 5	26.95
9	23.03	July 16	46.28
9	23.00	Sept. 3	66.86
9	23.00	Oct. 6	48.28
21	45.56	Nov. 7	35.70
21	45.54		
Sept. 9	57.52	<u>1932</u>	
9	57.36	Feb. 20	55.85
Oct. 14	39.66	Mar. 12	19.87
14	41.64	Apr. 9	18.87
14	42.65	May 7	19.95
Nov. 30	20.70	June 9	26.57
30	20.70	July 9	b 37.49 to 36.49
<u>1928</u>		Sept. 2	i 49.91 to 49.56
Jan. 7	14.77	Nov. 30	20.66
7	14.76	30	20.65
Feb. 21	12.99		
21	12.88	<u>1933</u>	
May 9	13.31	Jan. 7	15.37
9	13.30	Feb. 17	14.13
Aug. 8	72.74	Mar. 11	11.97
Oct. 17	34.65	May 13	10.37
Nov. 27	23.77	Sept. 8	42.65
		8	42.61
<u>1929</u>		Oct. 27	18.95
Jan. 15	20.32	Nov. 28	14.28
Feb. 5	15.13		
Mar. 16	11.43	<u>1934</u>	
Apr. 24	13.94	Feb. 1	9.64
24	13.93	Apr. 14	8.35
24	12.76	May 12	8.38
24	12.75	Sept. 22	20.73
Sept. 11	61.63		
Oct. 11	40.79	<u>1935</u>	
11	40.78	Mar. 7	8.85
11	39.90	Apr. 17	7.04
Nov. 22	28.93	June 15	16.22
Dec. 20	23.91	Aug. 7	38.84
20	23.89	Sept. 13	35.91
20	23.79	Nov. 14	12.58
<u>1930</u>		<u>1936</u>	
Jan. 15	18.78	Feb. 29	9.68
15	18.77	Oct. 3	27.74
Feb. 7	15.69	Dec. 12	9.74
7	15.68		
Mar. 12	15.01		
Apr. 9	13.43		
May 9	16.49		
June 6	32.42		
July 18	48.82		
Sept. 4	74.52		
Oct. 9	44.58		
9	44.43		
Nov. 7	33.86		
Dec. 3	27.14		

a 7 measurements.
b 5 "
c 24 "
d 4 "
e 6 "

f 9 measurements.
g 21 "
h 8 "
i 3 "

Bradley Beach 650-foot well

Asbury Park region

Well No.: 29.24.4.8.4.Owner: Monmouth Consolidated Water Co.Location: About 100 feet north of 8th Avenue and 100 feet west of tracks of New York & Long Branch Railroad, in Bradley Beach.Description: Drilled well about 650 feet deep, 8 inches in diameter, with 6-inch screen. Drilled in winter of 1923-24 for public water supply of Ocean Grove. Last pumped May 17, 1932.Measuring point: Top edge of crack in split cap covering casing, 17.54 feet above mean sea level and about 1 foot above land surface.Benchmark: Top of outer casing near land surface, 16.66 feet above mean sea level.Water-level measurements: First measured October 29, 1924. Highest observed water level, 5.17 feet below mean sea level April 17, 1935; lowest observed water level, 136.68 feet below mean sea level August 27, 1925.

Altitude of water level in Bradley Beach 650-foot well,
in feet below mean sea level

Date	Water level	Date	Water level
<u>1924</u>		<u>1929</u>	
Oct. 29	38.81	Jan. 15	11.98
Nov. 13	33.48 to below	Feb. 5	10.19
	a 82.46	Mar. 16	7.89
<u>1925</u>		Apr. 24	7.71
Jan. 21	21.86	Sept. 11	50.45
21	26.33	Oct. 10	35.24
22	a 21.88 to 30.78	Nov. 22	22.63
23	22.82	Dec. 20	18.12
23	22.54		
Apr. 1	20.40	<u>1930</u>	
1	23.90	Jan. 15	15.55
Aug. 27	136.68	Feb. 7	13.68
Sept. 18	below 82.46	7	12.63
Dec. 5	28.78	Apr. 9	11.63
		May 9	12.60
<u>1926</u>		June 6	20.50
Jan. 9	25.42	Aug. 15	53.59
July 14	131.46	Sept. 4	51.25
Aug. 12	136.46	Oct. 9	40.19
Sept. 8	135.96	Nov. 7	29.83
Dec. 22	20.45	Dec. 3	24.61
<u>1927</u>		<u>1931</u>	
Apr. 1	12.49	Jan. 8	19.88
June 8	14.28	Feb. 4	16.68
July 21	31.10	Mar. 17	14.83
Sept. 9	40.72	Apr. 15	13.22
Sept. 10	43.44	May 7	13.20
Oct. 14	25.50	June 5	16.97
Nov. 30	17.67	July 16	31.58
<u>1928</u>		Oct. 6	39.20
Jan. 7	13.61	Nov. 7	30.84
Feb. 20	12.23	<u>1932</u>	
21	9.79	Jan. 21	20.06
May 9	8.20	Feb. 20	17.46
Oct. 17	24.04	Mar. 12	17.76
Nov. 27	17.12	Apr. 9	15.38

Bradley Beach 650-foot well--Continued

Asbury Park region

Date	Water level	Date	Water level
<u>1932</u>		<u>1934</u>	
May 7	16.22	May 12	7.47
June 9	13.69	Sept. 22	24.01
July 9	16.45		
Sept. 2	29.13	<u>1935</u>	
Nov. 30	17.63	Mar. 7	7.29
<u>1933</u>		Apr. 17	5.17
Jan. 7	14.01	June 15	7.80
Feb. 17	10.90	Aug. 7	17.10
Mar. 11	10.01	Sept. 13	22.41
May 13	7.45	Nov. 14	13.54
Sept. 8	25.42		
Oct. 27	18.47	<u>1936</u>	
Nov. 28	14.60	Feb. 29	9.06
		Sept. 3	22.29
<u>1934</u>		Dec. 12	13.16
Feb. 1	9.15		
Apr. 14	7.06		

a 7 measurements.

Fluctuations of water level in the Runyon area

About 30 of the wells in the Runyon area, most of them farm wells, have been measured more or less regularly since 1923. The average fluctuations of the water level in these wells from 1923 to date are given in the following table. There is considerable difference in depth and in altitude of the land surface between the various wells, and in order to eliminate these factors from the average, the water level in each well has been converted to an altitude above an assumed datum plane a short distance below the bottom of the well. The number of wells on which each average is based is shown in the table. The averages are, of course, most significant on those days when the largest number of wells were measured. Measuring of the farm wells was discontinued between June 1929 and September 1931. The averages reported for this period are based upon measurements in four test wells in the Perth Amboy waterworks well field at Runyon. These four wells are not entirely removed from the effects of pumping, but it is believed that they are fairly representative of the general fluctuations of the water table in the area.

The water level in the deeper wells reaches its highest and lowest levels much later than that in the shallow wells. For this reason separate averages have been computed for the shallow wells and for the deep wells. There is, of course, no definite line of demarcation in nature, but all wells less than 25 feet in depth have been arbitrarily

classified as shallow wells, and all wells 25 feet or more in depth have been considered deep wells. The shallow wells respond more quickly than the deep wells to changes in precipitation and in the demands of vegetation for water. The lowest level in the shallow wells usually occurs between July and September, when the demands of plants for water are high. The lowest water level in the deep wells usually occurs about the end of the year. The water table at the deep wells is below the reach of most plant roots, and during the growing season, when the plants absorb most of the water that enters the ground, a deficiency in moisture is probably built up in the earth above the water table in these wells. After the demand for water by the plants is stopped by frost, this deficiency must be made up before any water can pass through the intervening material and reach the water table at these deeper wells.

Average fluctuations of water levels in water-table wells
near Runyon, N. J., November 1923 to December 1936 in feet
above an assumed datum

Date	Shallow wells		Deep wells	
	Number of wells	Water level	Number of wells	Water level
<u>1923</u>				
Nov. 2	3	9.49	1	5.17
8	4	8.84	2	8.14
Dec. 8	6	7.46	3	6.68
12, 13	17	8.59	2	5.66
<u>1924</u>				
Jan. 24, 25	24	12.48	5	6.39
Feb. 25	5	11.97	.	....
Mar. 4	18	13.10	5	7.27
May 19	18	13.45	4	9.19
Aug. 5	23	10.00	5	10.00
25	16	9.89	4	9.82
Sept. 16	23	10.87	5	9.77
Oct. 2, 3	21	11.21	5	9.48
30, 31	23	10.41	5	9.22
Nov. 18	21	9.67	5	8.79
Dec. 19, 20	25	10.71	5	8.26
<u>1925</u>				
Feb. 5, 6	25	10.63	5	7.72
Mar. 6	27	12.98	5	8.13
Apr. 27	25	11.63	5	8.33
June 19	26	10.05	5	7.98
Aug. 11	25	9.71	5	7.43
Sept. 18	25	8.53	5	6.96
Oct. 21	24	8.70	5	6.54
<u>1926</u>				
Jan. 7	26	10.92	5	6.14
Mar. 11	27	12.71	5	6.40
Apr. 22	27	12.00	5	7.00
May 26	27	11.56	5	7.08
June 15	27	10.65	5	6.99
July 15	24	9.88	5	6.76
Aug. 19	27	11.90	5	6.46
Sept. 14	27	11.88	5	6.64
Nov. 24	27	12.57	5	6.88
Dec. 21	23	11.87	5	7.74

Average fluctuations of water levels in water-table wells
near Runyon, N. J., November 1923 to December 1936--Continued

Date	Shallow wells		Deep wells	
	Number of wells	Water level	Number of wells	Water level
<u>1927</u>				
Feb. 10	15	12.25	1	8.80
Mar. 31	18	12.10	1	9.21
Apr. 1	11	12.33	4	8.23
May 18	26	11.48	5	8.12
July 21	27	10.13	5	7.73
Sept. 8, 10	24	12.36	5	8.08
Oct. 13	27	12.10	5	8.28
Nov. 30	20	13.32	3	9.39
<u>1928</u>				
Feb. 20, 21	21	12.71	3	10.42
May 8	2	11.54	.	....
Aug. 7	25	12.33	5	11.85
Oct. 16	26	11.57	5	11.81
Nov. 26	23	11.09	5	11.13
<u>1929</u>				
Jan. 14, 15	14	12.53	1	8.40
Feb. 4	27	11.87	5	10.74
Mar. 15	26	13.25	5	10.51
June 28	24	11.19	5	11.40
Nov. 26	2	8.26	.	....
Dec. 21	2	8.85	.	....
<u>1930</u>				
Jan. 2	2	9.01	.	....
Feb. 4	3	10.02	.	....
Mar. 11	4	13.19	.	....
Apr. 8	4	12.27	.	....
May 6	4	11.88	.	....
June 4	4	9.76	.	....
July 28	3	9.72	.	....
Aug. 25	2	9.26	.	....
Sept. 23	2	8.47	.	....
Dec. 2	2	8.32	.	....
<u>1931</u>				
Jan. 7	3	10.44	.	....
Feb. 5	4	10.46	.	....
Mar. 6	4	12.00	.	....
Apr. 16	4	12.81	.	....
May 8	4	11.92	.	....
June 12	3	12.79	.	....
July 29	3	8.40	.	....
Sept. 9	26	9.56	5	6.64
Oct. 7	24	8.29	5	6.38
Nov. 13	22	8.43	5	5.79
<u>1932</u>				
Jan. 12	22	12.27	4	5.84
Feb. 24	23	11.79	4	5.60
Mar. 11	25	12.43	4	5.74
Apr. 15	25	13.37	5	5.55
May 10	27	12.00	6	5.96
June 13	26	10.91	6	6.64
Aug. 26	13	8.30	5	5.49
Sept. 24	11	6.72	5	5.22
Oct. 20	26	8.34	6	5.06
<u>1933</u>				
Jan. 3	25	12.55	6	5.84
May 10	22	13.72	6	8.40
July 5	21	12.30	6	9.43
Oct. 16	23	11.21	6	8.54
Nov. 28	23	11.01	5	7.98

Average fluctuations of water levels in water-table wells
near Runyon, N. J., November 1923 to December 1936--Continued

Date	Shallow wells		Deep wells	
	Number of wells	Water level	Number of wells	Water level
1934				
Jan. 25	24	12.64	6	7.73
May 8	19	12.81	6	8.64
Sept. 17	20	12.77	6	8.99
Oct. 20	17	12.13	6	9.69
Nov. 18	22	11.92	6	9.09
Dec. 15	22	11.66	6	9.59
1935				
Jan. 8	21	12.24	6	9.06
Feb. 6	17	11.89	6	8.98
Mar. 16	11	13.38	4	8.87
Apr. 16	22	13.18	6	9.37
May 13	22	11.99	6	9.78
June 6	22	10.87	6	9.49
July 4	22	10.54	6	9.68
July 13	21	10.54	6	9.31
July 19	21	10.07	6	8.80
Aug. 5	23	9.83	6	8.74
Sept. 9	18	10.86	6	6.47
Oct. 9	20	9.65	6	5.99
Nov. 19	17	12.44	6	5.84
Dec. 12	22	12.28	6	5.62
1936				
Jan. 14	23	12.91	6	7.46
Feb. 6	19	11.62	5	7.21
Mar. 27	20	13.32	6	8.84
Apr. 9	23	13.22	6	8.89
May 11	19	11.86	6	9.95
June 9	21	10.89	6	9.97
July 7	18	10.78	6	9.60
Aug. 10	20	9.52	6	8.72
Sept. 4	20	8.79	6	8.42
Oct. 7	21	10.93	6	7.45
Nov. 2	21	10.87	6	7.71
Dec. 23	19	12.12	5	7.28

Morrell well, Runyon region

Well No.: 29.11.1.2.3.

Owner: Joseph Morrell.

Location: About a quarter of a mile northeast of Moerls Corner and about 4 miles southeast of Old Bridge.

Description: Dug well about 8 feet deep. Equipped with a water-stage recorder. Used for water-level observations exclusively.

Measuring point: Zero of vernier of hook gage attached to inside of recorder shelter. Altitude 77.12 feet above mean sea level and 9 feet above the assumed datum plane for the station. (In Water-Supply Paper 777 the altitude of the assumed datum plane was erroneously reported 70.12 feet above mean sea level. It should have been reported as 68.12 feet.)

Benchmark: Copper nail and washer marked "U.S.G.S.-W.R." in top of large stump near the road between Mr. Morrell's house and garage and about 150 feet from the well. Altitude 71.12 feet above mean sea level.

Water-level measurements: Highest observed water level, 75.08 feet above mean sea level March 28, 1932; lowest observed water level, 68.05 feet above mean sea level October 6, 1932.

A water-stage recorder has been maintained on the Morrell well since August, 1923. This well was dug especially for water-level observations and is not affected by artificial withdrawal of water. It is situated in a flat, almost swampy valley where the water table is usually near the land surface. It is surrounded by a heavy growth of deciduous bushes and small trees, and under favorable conditions, during the growing season, the record shows a very pronounced diurnal fluctuation, which has been attributed to the vegetal use of water in the vicinity. The following table shows the water level in the Morrell well on the first of each month in 1936 and the average water level on the same dates during the preceding years of record. It shows that the average water level in this well for 1936 as a whole was about the same as the average water level for the preceding years. However, it fluctuated considerably from the normal during the course of the year. The water level was generally below normal until some time in September, and thereafter it was considerably above normal. A similar comparison for 1935 is given in Water-Supply Paper 777, page 100.

Water levels in Morrell Well on the first of each month, January 1936 to January 1937, and the average water levels on the same dates for the preceding years of record, in feet above an assumed datum

Date	Water level	Average water level in preceding years of record	Date	Water level	Average water level in preceding years of record
Jan. 1, 1936	5.34	5.83	Aug. 1, 1936	3.85	3.82
Feb. 1	5.28	5.65	Sept. 1	3.04	3.86
Mar. 1	6.20	5.84	Oct. 1	5.97	4.04
Apr. 1	5.72	5.87	Nov. 1	5.41	4.88
May 1	5.35	5.64	Dec. 1	5.43	5.45
June 1	4.75	5.35	Jan. 1, 1937	5.95	....
July 1	4.86	4.56	Jan. 1, 1937	5.95	....

Monthly water levels from 1923 to 1935, and weekly water levels in 1936 are given in the following table.

Altitude of water level in Morrell well at the end of the day in feet above mean sea level

Date	Water level	Date	Water level	Date	Water level
<u>1923</u>		<u>1924</u>		<u>1925</u>	
Sept. 1	70.56	Sept. 1	73.17	Sept. 1	70.57
Oct. 1	72.06	Oct. 1	74.02	Oct. 1	69.72
Nov. 1	73.52	Nov. 1	73.22	Nov. 1	72.07
Dec. 1	74.02	Dec. 1	73.72	Dec. 1	72.47
<u>1924</u>		<u>1925</u>		<u>1926</u>	
Jan. 1	74.22	Jan. 1	73.72	Jan. 1	73.49
Feb. 1	73.94	Feb. 1	74.06	Feb. 1	74.32
Mar. 1	74.06	Mar. 1	74.66	Feb. 27	74.21
Apr. 1	73.97	Apr. 1	74.17	Apr. 1	74.13
May 1	74.20	May 1	74.02	May 1	73.81
June 1	73.82	June 1	73.72	June 1	73.90
July 1	73.52	July 1	71.47	July 1	72.72
Aug. 1	71.62	Aug. 1	71.62	Aug. 1	72.19

Altitude of water level in Morrell well at the end of the day
in feet above mean sea level--Continued

Date	Water level	Date	Water level	Date	Water level
<u>1926</u>		<u>1931</u>		<u>1936</u>	
Sept. 1	73.87	Apr. 1	74.57	Jan. 4	74.25
Oct. 1	72.77	May 1	73.56	11	74.14
Nov. 1	74.12	June 1	73.67	18	74.18
Dec. 1	74.07	July 1	72.47	25	73.65
		Aug. 1	72.18	Feb. 1	73.40
<u>1927</u>		Sept. 1	72.50	8	73.41
Jan. 1	74.02	Oct. 1	71.02	15	73.42
Feb. 1	73.97	Nov. 1	72.62	22	73.62
Mar. 1	74.07	Dec. 1	73.19	29	74.26
Mar. 30	73.73			Mar. 7	74.07
May 1	73.86	<u>1932</u>		14	74.15
June 1	73.67	Jan. 1	74.33	21	74.28
July 1	72.87	Feb. 1	73.60	28	74.14
Aug. 1	72.28	Mar. 1	73.51	Apr. 4	73.82
Sept. 1	74.37	Apr. 1	74.12	11	74.28
Oct. 1	72.47	May 1	73.67	18	73.77
Nov. 1	73.78	June 1	72.83	25	73.55
Dec. 1	73.97	July 1	72.37	May 2	73.46
		Aug. 1	70.62	9	73.52
<u>1928</u>		Aug. 26	69.57	16	73.54
Jan. 1	73.93	Oct. 1	68.13	23	73.21
Feb. 1	73.84	Nov. 1	71.92	30	72.97
Mar. 1	73.87	Dec. 1	73.82	June 6	72.56
Apr. 1	74.01			13	73.65
May 1	73.97	<u>1933</u>		20	73.72
June 1	73.51	Jan. 1	73.98	27	72.96
July 1	73.72	Feb. 1	73.77	July 4	72.67
Aug. 1	73.27	Feb. 27	73.87	11	73.41
Sept. 1	73.52	Apr. 1	73.92	18	72.94
Oct. 1	73.72	May 1	73.57	25	72.37
Nov. 1	73.22	June 1	73.93	Aug. 1	71.97
Dec. 1	73.72	July 2	72.41	8	71.57
		Aug. 1	71.12	15	71.09
<u>1929</u>		Sept. 1	73.32	22	70.71
Jan. 1	73.93	Oct. 1	73.36	29	71.16
Feb. 1	73.51	Nov. 1	73.40	Sept. 5	71.03
Mar. 1	74.02	Dec. 1	73.37	12	70.57
Apr. 1	73.47			19	73.77
May 1	73.82	<u>1934</u>		26	73.29
June 1	73.27	Jan. 1	74.22	Oct. 3	73.75
July 1	73.22	Feb. 1	73.58	10	73.51
Aug. 1	71.66	Mar. 1	73.38	17	74.22
Sept. 1	70.66	Apr. 1	74.25	24	73.66
Oct. 1	72.42	May 1	73.57	31	73.53
Nov. 1	73.82	June 1	73.23	Nov. 7	73.64
Dec. 1	73.52	July 1	71.83	14	73.71
		Aug. 1	72.52	21	73.59
<u>1930</u>		Sept. 1	71.16	28	73.64
Jan. 1	74.03	Oct. 1	73.98	Dec. 5	73.99
Feb. 1	73.67	Nov. 1	73.56	12	74.33
Mar. 1	74.01	Dec. 1	73.87	19	74.60
Apr. 1	73.61			26	73.94
May 1	73.52	<u>1935</u>			
June 1	73.17	Jan. 1	74.33		
July 1	72.69	Feb. 1	73.75		
Aug. 1	72.28	Mar. 1	73.96		
Sept. 1	71.72	29	74.08		
Oct. 1	70.57	May 1	73.71		
Nov. 1	70.27	June 1	73.67		
Dec. 1	73.16	July 1	72.54		
		Aug. 1	71.66		
<u>1931</u>		23	70.97		
Jan. 1	73.73	Oct. 1	72.02		
Feb. 1	73.57	Nov. 1	74.18		
Feb. 27	73.80	Dec. 1	74.06		

Hulsart well, Runyon region

Well No: 29.11.1.2.9.Owner: Rulif Hulsart.Location: About 0.4 mile southeast of Moerl's Corner and 4.5 miles southeast of Old Bridge.Description: Dug well cased with concrete well blocks. Depth 21 feet, diameter 4.5 feet.Measuring point: Inside edge of top of angle iron at bottom of doors of recorder shelter, at point where doors meet, 115.83 feet above mean sea level and about 2.5 feet above land surface.Benchmark: Concrete curb at a point directly below and in front of measuring point. Altitude 114.52 feet above mean sea level.Water-level measurements: Well completed and recorder installed June 17, 1936. Highest water level, 98.43 feet above mean sea level June 20, 1936; lowest water level, 96.46 feet above mean sea level December 5, 1936.

Altitude of water level in Hulsart well, in feet above mean sea level, at midnight on the dates indicated
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level
1936					
June 20	98.43	Sept. 5	96.77	Nov. 7	96.64
27	98.26	12	96.65	14	96.59
July 4	98.08	19	96.73	21	96.49
11	97.89	26	97.02	28	96.41
18	97.85	Oct. 3	97.02	Dec. 5	96.36
25	97.69	10	96.91	12	96.56
Aug. 1	97.56	17	96.82	19	96.81
8	97.38	24	96.79	26	97.44
15	97.23	31	96.70		

Runyon test well

Well No: 29.1.4.4.1.A (field no. S-1).Owner: Perth Amboy Water Department, Perth Amboy.Location: About 50 feet south of well 50 at Perth Amboy waterworks, Runyon.Description: Auger hole cased with light sheet-metal pipe. Bored especially for water-level observations. Depth 12.5 feet, diameter 8 inches.Measuring point: Top of casing at seam, 16.49 feet above mean sea level and about 0.4 foot above land surface.Benchmark: Copper nail and washer marked "U.S.G.S.-W.R." in base of twin white-oak tree between well S-1 and well 50, 16.26 feet above mean sea level.Water-level measurements: First measured January 25, 1924. Highest observed water level, 11.46 feet above mean sea level April 16, 1935; lowest observed water level, dry (below 4.7 feet above mean sea level) on several occasions.

Altitude of water level in Runyon test well
in feet above mean sea level

Date	Water level	Date	Water level	Date	Water level
<u>1924</u>		<u>1928</u>		<u>1933</u>	
Jan. 25	8.17	Oct. 16	8.14	Jan. 4	11.15
30	7.91	Nov. 26	7.47	May 10	10.68
31	7.87			July 6	10.88
31	6.79	<u>1929</u>		Oct. 16	8.79
Feb. 25	8.02	Jan. 14	7.29	Nov. 29	7.81
May 19	10.09	Feb. 4	8.66		
Aug. 25	4.97	Mar. 15	9.75	<u>1934</u>	
Sept. 16	5.59	June 28	7.22	Jan. 24	10.39
Oct. 3	4.62	Sept. 10	Dry	Apr. 4	10.55
Dec. 19	Dry			May 8	10.93
		<u>1930</u>		Sept. 20	11.07
<u>1925</u>		Feb. 4	4.89	Oct. 27	10.49
Feb. 6	3.94	Mar. 11	10.45	Nov. 17	10.51
Mar. 6	8.75	Apr. 8	9.00	18	11.39
Apr. 27	Dry	May 6	8.20	Dec. 15	9.51
June 19	5.12	June 4	5.09		
Aug. 11	Dry	July 28	4.73	<u>1935</u>	
Sept. 18	Dry	Aug. 25	Dry	Jan. 8	8.91
Oct. 21	4.31			11	8.91
		<u>1931</u>		Mar. 3	9.59
<u>1926</u>		Jan. 7	6.94	15	9.48
Jan. 7	4.58	Feb. 5	6.69	16	9.49
Mar. 11	8.38	Mar. 6	8.80	Apr. 15	11.46
Apr. 22	8.54	Apr. 16	9.38	16	11.36
May 26	8.65	May 8	8.24	May 13	9.64
June 15	6.72	June 2	10.22	14	9.64
July 15	5.69	July 29	4.35	June 6	6.69
Aug. 19	7.97	Sept. 9	4.46	7	7.49
Sept. 14	9.02	Oct. 6	3.95	July 8	3.50
Nov. 24	9.48	Nov. 13	4.18	13	Dry
Dec. 21	8.81			15	Dry
		<u>1932</u>		19	Dry
<u>1927</u>		Feb. 24	10.80	Aug. 5	Dry
Feb. 10	8.90	Mar. 11	10.44	6	Dry
Mar. 31	9.52	Apr. 15	10.62	Nov. 19	7.49
Apr. 1	9.43	May 10	10.42	20	7.04
11	9.65	June 13	9.51	Dec. 13	7.83
May 17	9.55	July 8	9.06		
July 21	5.18	22	7.20	<u>1936</u>	
Sept. 8	10.49	Aug. 17	5.39	Jan. 17	8.49
Oct. 13	8.54	26	4.90	Mar. 29	9.60
Nov. 30	9.68	Sept. 3	4.57	Apr. 22	7.54
		24	Dry	June 22	6.69
<u>1928</u>		30	3.95	July 31	3.94
Feb. 20	9.54	Oct. 14	4.19	Sept. 11	Dry
May 8	9.34	20	4.39	Oct. 13	5.69
Aug. 7	8.81	Nov. 29	10.79	Nov. 6	5.99

Runyon farm well

Well No.: 29.1.4.3.9 (field no. F-3).

Owner: Clyde Bowne.

Location: 1.6 miles north of Browntown, 300 feet west of road on hilltop

Description: Dug well about 46 feet deep.

Measuring point: Top of 4-inch sill on brick curb, 70.14 feet above mean sea level, about 0.5 foot above land surface.

Benchmark: Copper nail and washer marked "U.S.G.S.-W.R." in root of apple tree in front of house, about 50 feet from well, 70.10 feet above mean sea level.

Water-level measurements: First measured November 8, 1923. Highest observed water level, 31.49 feet above mean sea level October 16, 1928; lowest observed water level, 24.14 feet above mean sea level March 11, 1932.

Altitude of water level in Runyon farm well F-3
in feet above mean sea level.

Date	Water level	Date	Water level	Date	Water level
<u>1923</u>		<u>1927</u>		<u>1933</u>	
Nov. 8	26.47	May 18	27.31	Nov. 28	27.68
Dec. 8	26.12	July 21	27.15		
		Sept. 10	27.18	<u>1934</u>	
<u>1924</u>		Oct. 13	27.44	May 8	27.46
Jan. 24	25.68	Nov. 30	28.05	Sept. 17	27.77
Mar. 4	26.00			Oct. 20	28.44
May 19	27.36	<u>1928</u>		Nov. 18	27.69
Aug. 5	28.88	Feb. 21	29.31	Dec. 15	28.70
25	28.91	Aug. 7	30.73		
Sept. 16	28.87	Oct. 16	31.49	<u>1935</u>	
Oct. 2	28.82	Nov. 26	31.18	Jan. 8	28.84
30	28.41			Feb. 6	28.52
Nov. 18	28.30	<u>1929</u>		Apr. 16	28.70
Dec. 20	27.89	Feb. 4	30.27	May 13	28.99
		Mar. 15	30.20	June 6	29.04
<u>1925</u>		June 28	30.99	July 4	29.02
Feb. 5	27.57			13	29.92
Mar. 6	27.55	<u>1931</u>		19	28.78
Apr. 27	27.58	Sept. 9	25.93	Aug. 5	28.54
June 19	27.22	Oct. 7	25.80	Oct. 9	27.77
Aug. 11	26.89	Nov. 13	25.34	Nov. 19	28.34
Sept. 18	26.60			Dec. 12	27.10
Oct. 21	26.19	<u>1932</u>			
<u>1926</u>		Jan. 22	24.67	<u>1936</u>	
Jan. 7	25.21	Feb. 24	24.40	Jan. 14	26.47
Mar. 11	25.41	Mar. 11	24.14	Feb. 6	27.04
Apr. 22	25.78	Apr. 15	24.42	Mar. 27	27.56
May 26	25.44	May 10	24.91	Apr. 9	27.64
June 15	25.97	June 13	25.21	May 11	28.27
July 15	25.77	Aug. 26	24.42	June 9	28.56
Aug. 19	25.64	Sept. 24	25.02	July 7	28.74
Sept. 14	25.65	Oct. 20	24.53	Aug. 10	28.54
Nov. 24	26.03	<u>1933</u>		Sept. 4	28.13
Dec. 21	26.16	Jan. 3	24.70	Oct. 7	27.79
<u>1927</u>		May 10	26.07	Nov. 4	27.47
Apr. 1	27.06	July 5	26.49	Dec. 23	28.14
		Oct. 16	27.90		

Runyon farm well

Well No.: 29.1.5.7.2 (field no. F-14).

Owner: William Jurman.

Location: Back of farm house west of side road about 0.6 mile north of point where it crosses Browntown-Matawan road, 0.6 mile east of Browntown.

Description: Dug well 17 feet deep.

Measuring points: Until September 9, 1931, top of wood frame in concrete cover over well, 42.54 feet above mean sea level. Since September 9, 1931, top of concrete cover over well, 43.24 feet above mean sea level and about 1.5 feet above ground surface.

Benchmark: Copper nail and washer marked "U.S.G.S.-W.R." in tree about 100 feet southwest of well, 44.51 feet above mean sea level.

Water-level measurements: First measured December 13, 1923. Highest observed water level, 38.42 feet above mean sea level May 19, 1924; lowest observed water level, dry on October 21, 1925 and November 13, 1931.

Altitude of water level in Runyon farm well F-14,
in feet above mean sea level

Date	Water level	Date	Water level	Date	Water level
<u>1923</u>		<u>1927</u>		<u>1934</u>	
Dec. 13	30.68	Sept. 10	35.43	Jan. 25	35.33
		Oct. 13	34.64	May 8	37.46
<u>1924</u>				Sept. 17	35.42
Jan. 24	34.36	<u>1928</u>		Oct. 20	36.74
Mar. 4	35.30	Feb. 21	37.00	Nov. 18	37.19
May 19	38.42	Aug. 7	36.94	Dec. 15	35.94
Aug. 5	34.34	Oct. 16	36.09		
Sept. 16	34.64	Nov. 26	35.06	<u>1935</u>	
Oct. 3	34.74			Jan. 8	36.04
31	33.83	<u>1929</u>		Feb. 6	35.94
Nov. 18	33.07	Feb. 4	35.21	Mar. 16	37.23
Dec. 20	33.27	Mar. 15	37.96	Apr. 16	38.06
		June 28	36.26	May 13	37.92
<u>1925</u>				June 6	36.67
Feb. 5	33.54	<u>1931</u>		July 4	35.16
Mar. 6	36.12	Sept. 9	30.88	13	34.48
Apr. 27	36.19	Oct. 7	29.39	19	34.02
June 19	34.17	Nov. 13	Dry	Aug. 5	33.05
Aug. 11	31.71			Oct. 9	30.26
Sept. 18	29.77	<u>1932</u>		Nov. 19	30.89
Oct. 21	Dry	Feb. 24	31.84	Dec. 12	33.34
		Mar. 11	32.64		
<u>1926</u>		Apr. 15	36.73	<u>1936</u>	
Jan. 7	31.89	May 10	36.12	Jan. 14	34.68
Mar. 11	34.34	June 13	34.24	Feb. 6	34.97
Apr. 22	34.41	Aug. 26	28.44	Mar. 27	37.65
May 26	34.67	Sept. 24	27.68	Apr. 9	37.95
June 15	34.14	Oct. 20	26.82	May 11	37.94
Aug. 19	31.70			June 9	36.11
Sept. 14	33.07	<u>1933</u>		July 7	35.14
Nov. 24	34.23	Jan. 3	34.54	Aug. 10	32.14
Dec. 21	33.26	May 10	39.01	Sept. 4	30.54
		July 5	37.04	Oct. 7	31.61
<u>1927</u>		Oct. 16	34.23	Nov. 4	32.86
Apr. 1	34.91	Nov. 28	33.51	Dec. 23	33.74
May 18	34.76				
July 21	32.74				

Runyon old deep well

Well No.: 28.5.4.3.8 (field no. 0D-10).

Owner: Perth Amboy Water Department, Perth Amboy.

Location: Near pumping station, Runyon.

Description: 8-inch well, 440 feet deep (last 33 feet in rock), screen set in No. 1 sand above rock.

Measuring point: Top of casing, 6.63 feet above mean sea level.

Water-level measurements: First measured September 10, 1929. Highest observed water level, 5.52 feet above mean sea level May 10, 1933. (Flowed in 1914 when drilled and at intervals until 1930). Lowest observed water level, 35.77 feet below mean sea level August 5, 1936.

Altitude of water level in Runyon old deep well
in feet above or below mean sea level

Date	Water level	Date	Water level	Date	Water level
<u>1929</u>		<u>1931</u>		<u>1934</u>	
Sept. 10	- 4.97	June 12	-16.68	Nov. 18	- 4.75
24	- 4.77	27	-18.11	Dec. 14	- 5.51
Dec. 31	+ 1.11	July 29	- 2.30		
31	- 1.67	Sept. 9	-19.34	<u>1935</u>	
		Nov. 13	-18.77	Jan. 9	- 4.49
<u>1930</u>				Feb. 8	- 8.02
Jan. 2	- 3.87	<u>1932</u>		Mar. 14	- 7.12
2	+ .60	Feb. 24	+ 4.58	Apr. 15	-10.61
Feb. 4	- .66	Apr. 15	+ 4.75	May 14	- 9.81
Mar. 11	- .96	May 10	+ 1.08	June 7	- 9.67
Apr. 8	- 4.53	June 13	- 6.46	July 5	- 9.07
May 6	- 6.76	July 22	-17.42	Aug. 8	-28.95
June 4	- 5.59	Aug. 26	-16.51	Oct. 8	-35.40
26	-24.01	Sept. 30	- 8.39	Nov. 19	-22.49
July 28	-23.15	Nov. 4	-16.55	Dec. 14	-17.59
Aug. 25	-22.90	29	- 1.94		
Sept. 23	-23.59			<u>1936</u>	
Oct. 27	-13.50	<u>1933</u>		Feb. 24	-22.22
Nov. 10	-18.53	Jan. 25	- 8.02	Mar. 16	-16.15
Dec. 2	-16.07	May 10	+ 5.52	Apr. 8	-12.49
		Oct. 13	- 7.92	May 9	-10.13
<u>1931</u>		Nov. 29	- .87	June 8	-17.11
Feb. 5	-15.19			July 6	-12.14
Mar. 6	-15.85	<u>1934</u>		Aug. 5	-35.77
Apr. 16	- 5.64	Apr. 5	- 3.92	Sept. 3	-26.55
May 8	- 3.04	Oct. 31	- 2.57	Oct. 12	-27.27
				Dec. 29	-16.17

Short Hills test well

Canoe Brook region

Well No.: 26.21.1.5.6 (field no. 10).

Owner: Short Hills Water Co.

Location: On lawn of Short Hills pumping station.

Description: 3-inch well about 50 feet deep, screen in glacial drift.

Measuring point: Top of casing, altitude not determined.

Benchmark: None.

Water-level measurements: First measured June 5, 1930. Highest observed water level, 3.90 feet below top of casing May 12, 1933; lowest observed water level, 28.46 feet below top of casing August 8, 1932.

Depth to water level in Short Hills test well,

in feet below top of casing

Date	Water level	Date	Water level	Date	Water level
<u>1930</u>		<u>1931</u>		<u>1933</u>	
June 5	5.70	Mar. 13	4.91	Jan. 24	10.89
July 15	5.94	Apr. 29	9.84	Feb. 24	5.13
Aug. 12	6.73	Nov. 2	a 19.84	Mar. 31	3.92
Sept. 29	6.54			May 12	3.90
Oct. 16	6.57	<u>1932</u>		July 21	12.98
Nov. 26	5.90	Apr. 12	19.72	Sept. 13	13.81
Dec. 15	6.11	May 9	23.13	Oct. 18	11.39
		June 10	24.30	Nov. 28	12.07
<u>1931</u>		July 6	25.62		
Jan. 13	5.55	Aug. 8	28.46	<u>1934</u>	
Feb. 26	5.01	Dec. 22	13.42	Jan. 12	1.72

a Reference point raised 0.5 foot between April 29, and November 2,

Depth to water level in Short Hills test well--Continued

Date	Water level	Date	Water level	Date	Water level
<u>1934--Continued</u>		<u>1935</u>		<u>1936</u>	
Feb. 7	8.62	Feb. 12	7.54	Jan. 13	9.82
Mar. 12	9.95	Apr. 15	6.94	Oct. 13	7.77
Apr. 9	8.62	May 28	15.87	Nov. 16	11.11
May 15	7.13	Aug. 9	18.07		
Sept. 19	8.76	Sept. 9	15.87		
Oct. 15	9.10	Nov. 7	12.05		

Short Hills well

Canoe Brook region

Well No.: 26.21.1.5.8 (field no. 14).

Owner: Short Hills Water Co.

Location: At side of road about 300 feet southwest of Short Hills pumping station.

Description: 4-1/2-inch well, probably about 60 feet in depth, with screen in glacial drift.

Measuring point: Top of casing, altitude not determined.

Benchmark: None.

Water-level measurements: First measured September 10, 1931. Highest observed water level, 9.82 feet below top of casing January 12, 1934; lowest observed water level, 28.82 feet below top of casing January 19, 1932.

Depth to water level in Short Hills well

in feet below top of casing

Date	Water level	Date	Water level	Date	Water level
<u>1931</u>		<u>1933</u>		<u>1934--Continued</u>	
Sept. 10	27.41	Jan. 24	15.40	May 15	11.92
Oct. 9	26.39	Feb. 24	12.66	Sept. 19	13.76
Nov. 2	23.74	Mar. 31	11.37	Oct. 15	13.74
<u>1932</u>		May 12	10.95	<u>1935</u>	
Jan. 19	28.82	July 21	17.47	Apr. 15	11.77
Feb. 19	27.90	Sept. 13	17.79	May 28	a Below 16.6
Mar. 10	26.99	Oct. 18	15.71	Aug. 9	21.56
Apr. 12	24.10	Nov. 28	16.24	Sept. 9	19.89
May 9	26.38	<u>1934</u>		Nov. 7	16.87
June 10	27.22	Jan. 12	9.82	<u>1936</u>	
July 6	28.61	Feb. 7	15.08	Jan. 13	14.66
Aug. 8	31.37	Mar. 12	14.47	Oct. 13	15.01
Dec. 22	17.14	Apr. 9	13.03	Nov. 16	15.70

a Well obstructed with rubbish which was later removed.

Roth well

East Paterson region

Well No.: 26.3.1.8.2.

Owner: Charles Roth.

Location: At rear of Mr. Roth's residence on Falmouth Avenue, East Paterson.

Description: Drilled well, depth 175 feet, diameter 6 inches, cased to rock at a depth of 84 feet.

Measuring point: Top of casing, 48.63 feet above mean sea level.

Benchmark: None. Measuring point permanent.

Water-level measurements: First measured August 23, 1926. Highest observed water level, 43.80 feet above mean sea level August 23, 1926 (flowed when drilled); lowest observed water level, 17.28 feet below mean sea level November 5, 1930.

Altitude of water level in Roth well, in feet
above or below mean sea level

Date	Water level	Date	Water level	Date	Water level
1926		1930		1933	
Aug. 23	+ 43.80	Jan. 27	- 13.21	Jan. 23	- 11.32
Sept. 22	+ 43.96	Feb. 13	- 12.90	Feb. 16	- 13.36
Oct. 6	+ 44.21	May 16	- 13.09	Mar. 13	- 10.32
Oct. 21	+ 42.05	June 9	- 10.62	May 11	- 6.50
Nov. 19	+ 27.83	July 16	- 13.52	July 7	- 9.79
Dec. 14	+ 16.16	Sept. 3	- 15.03	Aug. 24	- 8.71
		Oct. 10	- 15.40	Oct. 17	- 5.96
1927		Nov. 5	- 17.28	Nov. 27	- 7.74
Jan. 6	+ 23.23	Dec. 16	- 15.72		
Feb. 24	+ 8.06			1934	
Apr. 25	+ 18.88	1931		Mar. 13	- 12.99
May 24	+ 1.59	Jan. 14	- 15.31	Apr. 11	- 11.48
June 17	- 2.85	Feb. 10	- 16.63	May 14	- 7.18
July 20	- 7.22	Mar. 12	- 12.54	Sept. 21	- 13.71
Aug. 10	- 8.03	12	- 8.73	Oct. 19	- 8.71
Sept. 23	- .56	Apr. 14	- 12.20		
Oct. 26	- 5.71	May 12	- 8.26	1935	
Nov. 18	- 4.72	June 22	- 10.82	Jan. 10	- 15.97
1928		July 15	- 11.44	Feb. 11	- 7.30
Feb. 4	- .76	Aug. 21	- 11.62	Mar. 22	- 3.82
Apr. 19	+ .72	Sept. 11	- 7.10	Apr. 16	- 4.06
May 15	- 1.45	Oct. 9	- 15.31	May 27	- 9.46
Oct. 8	- 11.25	Nov. 3	- 15.32	Aug. 8	- 16.13
26	- 8.39			Sept. 10	- 16.03
Nov. 7	- 9.37	1932		Oct. 14	- 16.01
Dec. 6	- 10.20	Jan. 20	- 15.61	Nov. 6	- 16.34
1929		Feb. 18	- 15.89		
Jan. 17	- 12.82	Mar. 9	- 15.27	1936	
Mar. 13	- 12.33	Apr. 11	- 11.80	Jan. 10	- 15.97
Apr. 23	+ .41	May 11	- 1.06	June 24	- 9.47
June 27	+ 10.99	June 8	- 13.27	Aug. 14	- 13.42
27	+ 11.19	Aug. 19	- 15.10	Sept. 10	- 13.01
		July 15	- 15.35	Oct. 1	- 12.91
		Oct. 26	- 16.91	Nov. 17	- 14.53
		Dec. 20	- 12.77	Dec. 10	- 14.89

Garfield Well

East Paterson region

Well No.: 26.3.1.7.3 (field no. 11)

Owner: City of Garfield.

Location: In Garfield well field, East Paterson, about 500 feet south-west of pumping station.

Description: 12-inch well, 353 feet deep; Triassic sandstone at 27 feet, casing extends 3 feet into sandstone; open rock hole 30 to 353 feet.

Measuring point: Top of casing, altitude 66.63 feet above mean sea level.

Benchmark: None. Reference point permanent.

Water level measurements: Water-stage recorder maintained since November 25, 1925. Highest observed water level, 56.2 feet above mean sea level March 8, 1926; lowest observed water level, 1.8 feet below mean sea level November 5, 1932.

Highest and lowest water level in Garfield well,
in feet above mean sea level
(From recorder charts)

Month	1926		1927		1928	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	54.0	53.3	47.4	27.8	....	....
Feb.	55.6	53.4	40.5	24.8	....	....
Mar.	56.2	55.5	42.0	21.9	....	....
Apr.	55.6	54.9	39.2	21.4	....	....
May	54.8	....	....	....	35.9	25.5
June	53.5	32.9	....	....	....	....
July	....	....	....	....	....	....
Aug.	50.7	40.5	35.3	27.8	35.2	21.3
Sept.	52.2	43.1	....	33.9	36.7	22.8
Oct.	52.0	41.1	40.3	30.4	32.1	18.6
Nov.	53.7	45.8	40.1	30.4	30.4	16.3
Dec.	53.0	38.0	40.4	24.7	28.7	14.6

Month	1929		1930		1931	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	21.3	11.0	18.5	8.7	13.8	5.4
Feb.	19.6	12.0	18.5	9.2	15.2	6.0
Mar.	30.5	13.1	26.6	11.7	19.8	9.6
Apr.	34.2	19.0	29.7	23.1	22.7	11.7
May	....	....	28.2	14.6	28.6	15.0
June	32.8	19.5	21.9	9.1	26.8	16.5
July	....	....	19.4	8.1	22.8	9.6
Aug.	26.3	15.3	14.6	6.1	19.1	10.2
Sept.	21.4	12.9	16.0	6.0	19.8	7.1
Oct.	20.0	7.7	11.4	2.8	12.2	5.3
Nov.	14.3	6.7	10.5	2.7	10.3	2.9
Dec.	14.9	4.6	13.6	5.1	8.2	1.4

Garfield well--Continued

Month	1932		1933		1934	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
Jan.	11.0	1.0	21.3	9.2	....	....
Feb.	13.4	1.8	15.7	7.0	....	....
Mar.	17.8	7.7	26.2	8.7	22.6	11.4
Apr.	23.9	9.5	25.2	....	27.4	11.4
May	25.5	11.8	34.0	19.2	27.3	16.2
June	24.3	7.6	31.0	14.2	23.4	11.8
July	26.2	3.9	24.2	10.2	24.2	8.1
Aug.	11.6	1.0	27.2	12.6	14.7	6.4
Sept.	7.1	0.2	31.2	13.2	14.8	6.3
Oct.	7.3	a 1.2	36.2	19.7	26.3	9.4
Nov.	17.0	a 1.8	31.0	15.1	....	16.9
Dec.	21.1	10.1	30.8	19.4	24.6	11.4

1935

Month	Highest	Lowest	Month	Highest	Lowest
Jan.	....	....	July	....	....
Feb.	26.7	16.8	Aug.	8.1	2.6
Mar.	....	18.1	Sept.	16.4	2.8
Apr.	28.6	16.8	Oct.	13.4	0.6
May	26.9	11.0	Nov.	10.0	a 0.1
June	18.2	....	Dec.	7.2	0.0

1936

Week ending	Highest	Lowest	Week ending	Highest	Lowest
Jan. 18	9.8	a 0.3	Sept. 19	16.7	9.0
June 27	18.2	15.2	26	17.8	8.6
July 4	19.8	10.6	Oct. 3	15.9	7.5
11	20.2	6.4	10	9.8	6.9
18	20.0	11.4	17	18.1	6.8
25	19.9	12.1	24	18.1	17.0
Aug. 1	19.7	10.6	31	20.0	9.8
8	19.9	11.3	Nov. 7	15.4	9.0
15	23.2	9.8	14	15.2	8.2
22	17.2	8.7	21	9.1	7.3
29	17.8	9.2	28	11.4	6.8
Sept. 5	16.6	9.4	Dec. 5	17.4	7.2
12	17.6	8.8	12	17.8	7.1

a Below mean sea level.

NEW MEXICO

LEA COUNTY, MIDDLE RIO GRANDE VALLEY, MIMBRES VALLEY, AND PORTALES VALLEY

By C. V. Theis

The cooperative ground-water investigations in Lea County, Mimbres Valley, Portales Valley, and the Roswell artesian basin ^{1/} were continued in 1936 by the United States Geological Survey and the State engineer of New Mexico. In addition, an investigation of the middle Rio Grande Valley was made in connection with the Rio Grande Joint Investigation, by the Geological Survey, in cooperation with the State engineer, under the sponsorship of the National Resources Committee. Periodic observations on water levels in wells are being made as parts of all these projects. Measurements of the water levels in wells in all the areas under investigation are published biennially in the reports of the State engineer. In this report are given only the records from three key wells in the Roswell artesian basin, the previous records of which were included in Water-Supply Paper 777.

The cooperative investigation in Lea County has been in progress since 1930. Over a part of the county the water table stands within 50 feet of the land surface, but most of this shallow-water area is capped by limestone, and the water-level fluctuations are very small, amounting generally to only a few hundredths of a foot in a month. In the part of the county in which the limestone is not present and also near pumping plants the fluctuations of water level are much more pronounced. Ground-water recharge is effected by rainfall penetration and by absorption of water in ephemeral ponds in topographic depressions. There are in Lea County about 50 widely scattered wells that pump water for irrigation.

The ground-water investigation in the middle Rio Grande Valley was begun in 1936. About 950 shallow observation wells were established in the flood plain of the Rio Grande in Sandoval, Bernalillo, Valencia, and Socorro Counties. In this part of the valley irrigation is carried on chiefly by water diverted from the Rio Grande, and the water table is only a few feet below the land surface. A large part of this area is served by open drains. The measurements made in wells in 1936 show that in areas that were heavily irrigated the water levels reached their

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 106-114, 1936.

highest stages of the year in late spring or early summer, when adjacent land was irrigated most heavily, and in areas where there was little or no irrigation the water levels reached their lowest stages in late July, August or early September, as an effect of summer evaporation and transpiration.

The investigation in the Mimbres Valley, Luna County, has been carried on for about 10 years. The valley is essentially the lowland portion of the potential drainage basin of the Mimbres River, in southwestern New Mexico. The wide bolsons of the Mimbres Valley are underlain by thick sedimentary deposits, including sand and gravel that contain considerable water, most of which is within 150 feet of the land surface. Ground-water recharge is derived principally from the flood waters of the Mimbres River, which is ephemeral in its lower course. There are about 125 irrigation wells in the valley, most of which were pumped heavily in 1936. During the year a general decline in water level occurred in the heavily pumped districts, ranging from a few hundredths of a foot to about 1.5 feet in wells on which periodic observations are being made.

The investigation in Portales Valley, Roosevelt County, has been in progress since 1931. The valley is a broad, shallow depression in the High Plains, under a large part of which the ground water is within 50 feet of the surface. About 350 irrigation wells in this valley were pumped in 1936. Recharge to the ground water is effected by rainfall penetration on the valley floor and adjacent areas on the High Plains. Observations on the water levels in wells show that in certain sandy areas abnormally large amounts of rainfall are followed by an immediate rise in the water table, but over the larger part of the valley the effects of pumping mask whatever variations in recharge that occur. Water levels declined throughout most of the valley in 1936, averaging a decline of about 0.5 foot in wells on which records are available.

ROSWELL ARTESIAN BASIN

By A. G. Fiedler

The collection of records of the fluctuations of artesian head in three representative wells equipped with water-stage recorders in the Roswell artesian basin was continued during 1936 by the artesian-well supervisor under the supervision of the State engineer and the Pecos Valley Conservancy District. Periodic observations on other artesian wells within the area were made by the artesian well supervisor and are

discussed in the Biennial report of the State engineer. Periodic observations were made on a number of nonartesian wells in the shallow groundwater area in the Rio Felix basin, west of Hagerman, where, in 1927, about 580 acres were irrigated with water obtained from shallow wells. The records for these wells for 1936 are on file in the office of the artesian-well supervisor, at Roswell.

The mean monthly water levels in the three key wells, shown in the following tables, were ascertained by averaging the mean daily water levels determined from an inspection of the recorder graph or, for days of wide fluctuations, by averaging the water level for fractional parts of a day. The mean annual water level was determined by averaging the mean monthly water levels. All records were furnished through the courtesy of Clifford G. Smith, artesian-well supervisor of the Roswell artesian basin. Records of water levels prior to 1936 are given in Water-Supply Paper 777, pages 112-113.

Mean monthly and annual artesian head in three observation wells

in the Roswell artesian basin, New Mexico

(Water levels are given in feet above mean sea level)

Berrendo well, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 9, T. 10 S., R. 24 E. Depth 258 feet, diameter 10 inches, depth to artesian aquifers 170 feet and 241 feet. Measuring point, chisel-cut square at southwest corner of concrete curb of well pit, flush with land surface and 3,586.2 feet above mean sea level.

Month	Water level (feet)	Month	Water level (feet)	Month	Water level (feet)
Jan. 1936	3,568.7	May 1936	3,564.4	Sept. 1936	3,563.5
Feb.	3,568.8	June	3,565.1	Oct.	3,565.8
Mar.	3,566.9	July	3,563.4	Nov.	3,566.5
Apr.	3,565.2	Aug.	3,562.2	Dec.	3,567.0
				Annual	3,565.6

Orchard Park well, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 12 S., R. 25 E. Depth 810 feet, diameter 8 inches, depth to artesian aquifers 790 feet. Measuring point, chisel-cut cross near top of well casing, about 0.4 foot above land surface and 3,546.6 feet above mean sea level. (Former benchmark, 3,547.7 feet above mean sea level, destroyed when well fitting was removed. See U. S. Geol. Survey Water-Supply Paper 777, p. 112, for previous description.)

Month	Water level (feet)	Month	Water level (feet)	Month	Water level (feet)
Jan. 1936	3,530.3	May 1936	3,517.2	Sept. 1936	3,517.8
Feb.	3,524.2	June	3,519.8	Oct.	3,530.4
Mar.	3,521.4	July	3,509.3	Nov.	3,532.8
Apr.	3,512.5	Aug.	3,506.9	Dec.	3,532.7
				Annual	3,521.3

Artesia well, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 17 S., R. 26 E. Depth 861 feet, diameter 8 inches. Measuring point, chisel-cut cross in top of well casing, about 0.5 foot above land surface and 3,406.7 feet above mean sea level.

Month	Water level (feet)	Month	Water level (feet)	Month	Water level (feet)
Jan. 1936	3,393.0	May 1936	3,381.7	Sept. 1936	3,379.0
Feb.	3,390.2	June	3,384.1	Oct.	3,393.1
Mar.	3,386.6	July	3,375.7	Nov.	3,395.8
Apr.	3,378.2	Aug.	3,374.7	Dec.	3,396.2
				Annual	3,385.7

As in previous years, the records for all three wells indicate a major seasonal fluctuation in the artesian head and a marked response to changes in draft from wells used for irrigation and to changes in precipitation. The head in the Orchard Park and Artesia wells was definitely higher at the end of 1936 than at the beginning of the year, whereas in the Berrendo well the highest mean monthly head was in January. The mean annual head in the Berrendo well was 1.5 feet lower than the mean annual head for 1935, a decline which doubtless can be attributed to deficiency in precipitation, which in turn caused a heavy draft for irrigation. The continued moderate decline in the Berrendo area may furthermore be caused by a rather general increase in draft for all uses from wells in this general region. In the Orchard Park well the lowest monthly stage in the period of record (see Water-Supply Paper 777) was reached in August 1936, but, largely because of the marked recovery in head during October, the mean monthly head for December 1936 was slightly higher than that in December 1935. The lowest mean monthly head in the Artesia well during 1936 was reached in August, but this head was 3.8 feet above the lowest head during the entire period of record, which occurred in August 1935. The mean monthly head was 0.9 foot higher for December 1936 than for December 1935, and the mean annual head was 1.3 feet higher in 1936 than in the preceding year.

NEW YORK

CENTRAL NEW YORK

By A. W. Harrington

Periodic water-level measurements in three wells in central New York were continued in 1936 by the United States Geological Survey in cooperation with the New York Department of Conservation. The locations of the wells, together with descriptions of the measuring points and previous water-level measurements, are published in Water-Supply Paper 777, pp. 127-129.

The water level at the Shackam Brook well 1 in August 1936 declined below the bottom of the well for the first time since measurements were begun in 1933, and the water level in the Sage Brook well 2 also reached a new low stage in 1936. The water level in Cold Brook well 1 declined in September 1936 to about its 1935 low stage but did not fall below that stage. Recovery in the fall of 1936 was abrupt, and the water levels in the wells at the end of 1936 stood as high as at the end of 1935, or even higher.

Shackham Brook Well 1

Depth to water in feet below measuring point

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 4, 1936	0.80	May 9, 1936	1.31	Sept. 5, 1936	a 7.50
11	.98	16	1.82	12	a 7.50
18	1.17	23	1.72	20	a 7.50
25	1.57	30	2.36	26	a 7.50
Feb. 1	1.85	June 6	3.15	Oct. 3	a 7.50
8	2.12	13	3.54	10	a 7.50
15	2.32	20	3.84	17	7.45
22	2.40	27	4.14	24	3.92
29	1.00	July 4	4.55	31	1.72
Mar. 7	1.00	11	4.90	Nov. 8	.77
14	.83	18	5.38	14	.90
21	.61	25	6.00	21	.87
28	.65	Aug. 1	6.50	29	1.18
Apr. 4	.73	8	6.95	Dec. 5	1.30
11	.64	15	7.25	12	.75
18	.70	22	a 7.50	19	1.13
25	.95	29	a 7.50	26	.78
May 2	1.42				

Sage Brook well 2

Jan. 4, 1936	1.84	Mar. 28, 1936	1.67	June 20, 1936	2.57
11	1.76	Apr. 4	1.74	27	2.75
18	1.64	11	1.59	July 4	2.92
25	1.94	18	1.74	11	3.11
Feb. 1	1.98	25	1.78	18	3.53
8	2.06	May 2	1.82	25	4.03
15	2.07	9	1.86	Aug. 1	4.60
22	2.08	16	1.90	8	5.10
29	1.96	23	1.96	15	5.34
Mar. 7	2.02	30	2.12	22	5.56
14	1.76	June 6	2.34	29	5.78
21	1.62	13	2.47	Sept. 5	6.00
a Bottom of well					

Sage Brook Well 2--Continued

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Sept. 12, 1936	6.36	Oct. 24, 1936	1.68	Nov. 28, 1936	2.03
19	6.70	31	1.99	Dec. 5	1.94
26	7.12	Nov. 7	1.77	12	1.62
Oct. 3	7.00	14	1.97	19	1.91
10	7.18	21	1.92	26	1.74
17	2.96				

Cold Spring Brook Well 1

Jan. 5, 1936	3.14	May 10, 1936	7.30	Sept. 6, 1936	11.14
12	3.94	17	7.61	13	10.00
26	4.98	24	7.93	20	9.20
Feb. 2	6.24	31	8.08	27	9.37
9	6.75	June 7	8.45	Oct. 4	8.93
16	7.28	14	8.71	11	8.77
23	8.70	21	8.87	18	3.49
Mar. 1	6.00	28	9.00	25	3.66
8	4.90	July 5	9.29	Nov. 1	4.46
15	2.93	12	9.49	8	3.77
22	3.05	19	9.73	15	5.19
29	3.80	26	10.00	22	6.07
Apr. 5	4.35	Aug. 2	10.34	29	6.79
12	3.28	9	10.61	Dec. 7	5.74
19	4.40	16	10.94	13	3.39
27	5.98	23	10.60	20	3.82
May 3	6.80	30	11.10	27	3.90

LONG ISLAND

By R. M. Leggette

The investigation of ground-water conditions on Long Island, by the United States Geological Survey in cooperation with the New York State Water Power and Control Commission and Nassau and Suffolk Counties, was continued during 1936. At the end of the year 13 automatic water-stage recorders were in operation on observation wells, and weekly water-level measurements were being made in 30 additional observation wells. A total of about 900 individual water-level measurements were made in 1936.

A detailed report pertaining to ground-water levels on Long Island is now in preparation and will probably be published by the New York State Water Power and Control Commission. Only a small part of the available data is therefore given in this report.

On page 125 of Water-Supply Paper 777 records of water level in New York City test well M-183 were given. During 1936 this well became clogged, and no further water-level measurements were possible.

Ground-water levels on Long Island in general were higher at the end of 1936 than at the beginning of the year--as much as 2 feet in some wells. This was doubtless in part the result of heavy precipitation during the year, for at New York City the total precipitation in 1936 was 46.33 inches, about 4.4 inches above normal. In areas of heavy pumping, however, there was a net decline of ground-water levels during the year. On the west end of Long Island, where the water table is below sea level in an area of more than 45 square miles, the water table continued to drop as in previous years.

The following descriptions cover all wells on Long Island for which water-level measurements are given in this report.

22-o. New York Water Service Corporation test well, near East 31st Street and Foster Avenue, Brooklyn. Diameter 10 inches, depth 465 feet. Measuring point, top of 10-inch flange, 5.2 feet above land surface and 15.92 feet above mean sea level. Water level Jan. 1, 1936, 17.29 feet below measuring point and 1.37 feet below mean sea level.

23k. New York Water Service Corporation test well, on southwest side of East 98th Street, near Rutland Road, Brooklyn. Diameter 8 inches; drilled to a depth of 383.6 feet but later plugged at a depth of 295 feet and perforated between depths of 280 and 290 feet. Measuring point, top of instrument shelf, 1.08 feet above top of 8-inch flange, 2.3 feet above land surface, and 42.18 feet above mean sea level (same as described in Water-Supply Paper 777). Water level Jan. 1, 1936, 64.78 feet below measuring point and 22.60 feet below mean sea level.

38b. C. J. Tagliabue Manufacturing Co., abandoned well in basement of factory at Park Avenue and Nostrand Avenue, Brooklyn. Diameter 8 inches, depth about 50 feet. Measuring point, top of instrument shelf, 0.15 foot above top of 8-inch casing, 0.5 foot above concrete floor (which is 6.8 feet below curb level) and 11.99 feet above mean sea level. Water level Jan. 1, 1936, 37.80 feet below measuring point and 25.81 feet below mean sea level.

158h. New York City Department of Water Supply, Gas, and Electricity, abandoned well at former Citizens Water Supply Co. pumping station 1, on southeast side of Cornish Street between Queens Boulevard and Poyer Street, Elmhurst, Queens County. Diameter 6 inches, depth about 50 feet. Measuring point, top of instrument shelf, 0.07 foot above top of 6-inch flange, 4.5 feet above land surface, and 31.23 feet above mean sea level (same as described in Water-Supply Paper 777). Water level Jan. 1, 1936, 16.65 feet below measuring point and 14.58 feet above mean sea level.

224a. New York City Department of Water Supply, Gas, and Electricity well 1 at former Citizens Water Supply Co. pumping station 3, on north side of Grand Central Parkway about 1,000 feet east of Queens Boulevard, Queens County. Diameter 24 inches, depth about 488 feet. Measuring point, top of instrument shelf, at about surface of sloping ground, and 25.91 feet above mean sea level. Water level Jan. 1, 1936, 20.22 feet below measuring point and 5.69 feet above mean sea level.

238i. New York City Department of Water Supply, Gas, and Electricity, abandoned well, Bayside No. 10, near Northern Boulevard, at old New York City Bayside pumping station, Bayside, Queens County. Diameter 6 inches, depth 375 feet. Measuring point, top of 6-inch flange, about 5 feet above land surface and 11.04 feet above mean sea level (same as described in Water-Supply Paper 777). Water level Jan. 1, 1936, 19.30 feet below measuring point and 8.26 feet below mean sea level.

397f. Village of Freeport abandoned deep well, at municipal power plant on Sunrise Highway about 200 feet west of Long Beach Avenue, Freeport, Nassau County. Diameter 12 inches, depth as reported by different persons 1,025 and 1,100 feet. Measuring point, top of instrument shelf, 2.76 feet above top of 12-inch casing, 3.2 feet above land surface, and 23.46 feet above mean sea level (2.76 feet higher than that described in Water-Supply Paper 777). Water level Jan. 1, 1936, 6.81 feet below measuring point and 16.65 feet above mean sea level.

512a. J. N. Hill well, on Wheatley Road near Cedar Swamp Road, Wheatley Hills, Nassau County. Diameter 6 inches, depth about 300 feet. Measuring point, top of 6-inch casing, about flush with land surface, and 218.68 feet above mean sea level (same as described in Water-Supply Paper 777, in which the altitude was incorrectly given as 218.77 feet). Water level Jan. 1, 1936, 137.78 feet below measuring point and 80.90 feet above mean sea level.

379c. Village of Rockville Centre abandoned shallow well, in basement of municipal power station, Morris Avenue and Maple Avenue, Rockville Centre, Nassau County. Diameter 8 inches, depth 46.3 feet. Measuring point, top of 8-inch casing, about level with concrete floor, about 5 feet below land surface, and 21.21 feet above mean sea level (same as described in Water-Supply Paper 777). Water level Feb. 5, 1936, 7.85 feet below measuring point and 13.36 feet above mean sea level.

674c. New York City Board of Water Supply, abandoned California stovepipe well 3, at old West Islip Experiment Station, about 3,500 feet southeast of intersection of Udalls Road and Hunter Avenue and about 2 miles west of Bayshore, Suffolk County. Diameter 16 inches, depth about 200 feet. Measuring point, top of instrument shelf, about 2.9 feet above land surface, and 33.22 feet above mean sea level (same as described in Water-Supply Paper 777). Water level Feb. 5, 1936, 14.01 feet below measuring point and 19.21 feet above mean sea level.

CH-201. New York City Department of Water Supply, Gas, and Electricity, test well, at junction of Hillside Avenue and Bacon Road, near Westbury, Nassau County. Diameter $1\frac{1}{2}$ inches, depth 43.3 feet. Measuring point, top of $1\frac{1}{2}$ -inch pipe, 0.4 foot above land surface, and 112.53 feet above mean sea level (same as described in Water-Supply Paper 777, in which altitude was incorrectly given as 112.31 feet). Water level Mar. 24, 1936, 38.39 feet below measuring point and 74.14 feet above mean sea level.

S-45. New York City Department of Water Supply, Gas, and Electricity, test well, 100 feet south of Pittsburg Avenue, on west side of Main Street, Massapequa, Nassau County. Diameter $1\frac{1}{2}$ inches, depth 22.6 feet. Measuring point, top of $1\frac{1}{2}$ -inch pipe, flush with land surface and 32.72 feet above mean sea level (same as described in Water-Supply Paper 777, in which altitude was incorrectly given as 32.50 feet). Water level Mar. 19, 1936, 11.97 feet below measuring point and 20.75 feet above mean sea level.

SU-75. New York City Department of Water Supply, Gas, and Electricity, test well, on east side of Sacitkos Manor Lane about 4,250 feet south of Montauk branch of Long Island Railroad, about $2\frac{1}{2}$ miles east of Babylon, Suffolk County. Diameter $1\frac{1}{2}$ inches, depth 14.7 feet. Measuring point, top of $1\frac{1}{2}$ -inch pipe, 0.7 foot above land surface and 15.85 feet above mean sea level. Water level Mar. 30, 1936, 4.35 feet below measuring point and 11.50 feet above mean sea level.

SU-81. New York City Department of Water Supply, Gas, and Electricity, test well, at northwest corner of Sacitkos Manor Lane and road 0.1 mile south of Bayshore Road, about $1\frac{1}{2}$ miles northwest of Bayshore, Suffolk County. Diameter 2 inches, depth 27.0 feet. Measuring point, top of 2-inch pipe, 0.6 foot above land surface and 41.49 feet above mean sea level. Water level Mar. 30, 1936, 12.13 feet below measuring point and 29.36 feet above mean sea level.

SU-86. New York City Department of Water Supply, Gas, and Electricity, test well, on east side of Sacitkos Manor Lane about 1,000 feet south of main line of Long Island Railroad, about $1\frac{1}{2}$ miles southwest of Brentwood, Suffolk County. Diameter $1\frac{1}{2}$ inches, depth 45.3 feet. Measuring point, top of $1\frac{1}{2}$ -inch pipe, 0.9 foot above land surface and 89.87 feet above mean sea level. Water level Mar. 30, 1936, 40.63 feet below measuring point and 49.24 feet above mean sea level.

Water levels in wells on Long Island

Wells equipped with automatic water-stage recorders

(Lowest daily water level, in feet above or below mean sea level; from recorder charts)

Date		22-o	23k	38b	158h	238i	347f	397f	512a
<u>1936</u>									
Jan.	1	-1.37	-22.60	-25.81	+14.58	+5.69	-8.26	+16.65	+80.90
	8	-1.33	-22.60	-25.72	+14.96	+5.77	-8.14	+.....	.....
	15	-1.26	-22.55	-25.66	+15.34	+5.89	-8.28	+.....	.....
	22	-1.20	-22.62	-25.57	+15.58	+5.71	-8.23	+.....	.....
	29	-1.18	-22.60	-25.52	+15.44	+5.43	-8.71	+.....	.....
Feb.	5	-1.18	-22.64	-25.41	+15.36	+5.65	-8.42	+.....	a+80.76
	12	-1.19	-22.64	-25.33	+.....	+5.59	-8.37	+.....	.....
	19	-1.20	-22.63	-25.28	+15.41	+5.58	-8.40	.....	.....
	26	-1.16	-22.54	-25.21	+15.64	+5.65	-8.39	.....	.....
	Mar. 4	-1.09	-22.53	-25.10	+15.88	+5.63	-8.55	.....	.....
Mar.	11	-1.06	-22.58	-25.00	+15.96	+5.62	-8.37	.....	.....
	18	-1.00	-22.48	-24.91	+16.17	+5.87	-7.92	.....	.....
	25	-.95	-22.54	-24.89	+16.26	+5.84	-7.85	.....	.....
	Apr. 1	-.87	-22.56	-24.86	+15.75	+5.87	-7.70	.....	.....
	8	-.82	-22.69	-24.86	+15.61	+6.32	-4.74	.....	.....
Apr.	15	-.73	-22.59	-24.78	+15.81	+6.59	-3.56	+17.06	+80.64
	22	-.71	-22.22	-24.77	+15.46	+6.83	-3.37	+17.00	+80.45
	29	-.68	-22.39	-24.77	+15.40	+6.73	-4.00	+16.87	a+80.74
	May 6	-.68	-22.46	-24.80	+15.14	+6.28	-4.82	+16.91	a+80.64
	13	-.85	-22.42	-24.89	+15.00	+6.13	-6.26	+16.95	.....
May	20	-.82	-22.54	-25.14	+14.84	+5.95	-6.64	+16.57	a+80.60
	27	-.82	-22.52	-25.36	+14.85	+5.57	-7.81	+16.64	a+80.98

a Estimated.

Water levels in wells on Long Island--Continued

Date	22-0	23k	38b	158h	224a	238i	397f	512a
<u>1936</u>								
June 3	-0.88	-22.69	-25.62	+14.54	+5.23	-9.21	+16.30	+a80.85
10	- .92	-22.86	-25.83	+14.41	+4.83	-10.75	+15.88	+a80.94
17	- .94	-22.90	-26.05	+14.48	+5.60	-9.04	+15.70	+80.93
24	- .94	-22.96	-26.25	+14.46	+5.86	-7.79	+15.57	+81.13
July 1	- .96	-23.03	-26.43	+14.23	+5.88	-7.66	+15.51	+81.04
8	- .98	-23.11	-26.55	+14.20	+5.59	.....	+15.40	+81.26
15	-1.03	-23.18	-26.70	+14.10	+4.78	-10.97	+15.30	+80.76
22	-1.06	-23.23	-26.83	+14.16	+5.07	-9.87	+14.95	+81.19
29	-1.10	-23.26	-27.00	+14.08	.....	.....	.....	+81.24
Aug. 5	-1.13	-23.33	-27.13	+13.88	+4.69	.....	+14.58	+81.19
12	-1.15	-23.37	-27.26	+13.84	+4.99	-8.55	+14.47	+81.32
19	-1.19	-23.42	-27.40	+13.78	+4.65	-10.01	+14.53	+81.32
26	-1.22	-23.46	-27.53	+13.79	+4.73	-10.05	+14.60	+81.31
Sept. 2	-1.25	-23.41	-27.63	+13.72	+5.12	-8.70	+14.69	+81.40
9	-1.29	-23.48	a-27.75	+13.62	+4.94	-8.79	+14.67	+81.46
16	-1.33	-23.59	-27.84	+13.53	+4.41	-8.07	+14.63	+81.43
23	-1.13	-23.63	-27.92	+13.95	+5.20	-8.27	+14.97	+81.45
30	-1.09	-23.73	-28.01	+13.74	+5.25	-7.21	+15.11	+81.37
Oct. 7	-1.01	-23.70	-28.13	+13.92	+5.20	-5.06	+15.58	+81.45
14	- .97	-23.71	a-28.17	+13.70	+5.30	-2.99	+15.46	+81.20
21	- .94	-23.71	a-28.20	+13.90	+5.31	-7.64	+15.85	+81.28
28	- .96	.....	a-28.18	+13.81	+5.41	-7.87	+15.92	+81.31
Nov. 4	-1.00	-23.66	a-28.06	+14.05	+5.61	-7.59	+16.14	+81.45
11	a-1.07	-23.74	a-28.05	+14.25	+5.66	-6.90	+16.07	+81.14
18	a-1.14	-23.77	a-28.00	+14.33	+5.57	-8.04	+16.02	+80.90
25	a-1.19	-23.68	a-27.96	+14.56	+5.40	-9.21	+16.57	+81.31
Dec. 2	a-1.24	-23.74	-27.87	+14.71	+5.10	-10.39	+16.16	+81.30
9	a-1.26	-23.74	-27.86	+14.87	+5.15	-10.55	+16.10	+81.14
16	a-1.19	-23.71	-27.84	+15.31	+5.34	-10.92	+16.42	+81.30
23	a-1.02	-23.71	-27.82	+15.59	+5.13	-11.02	+16.10	+80.96
30	a- .92	-23.65	-27.72	+15.54	+5.29	-11.24	+16.41	+81.28

a Estimated.

Wells measured weekly

(Water level in feet above mean sea level)

Date	379c	674c	CH-201	S-45	SU-75	SU-81	SU-86
<u>1936</u>							
Feb. 5	13.36	19.21	.....	.....	.....	.....	.....
Mar. 19	.....	.....	.....	20.75	.....	.....	.....
24	.....	.....	74.14	.....	.....	.....	.....
30	.....	.....	.....	.....	11.50	29.36	49.24
Apr. 11	14.58	.....	.....	.....	.....	.....	.....
18	14.68	.....	.....	.....	.....	.....	.....
25	14.76	.....	.....	.....	.....	.....	.....
May 2	14.73	.....	.....	.....	.....	.....	.....
9	14.59	.....	.....	.....	.....	.....	.....
16	14.43	.....	.....	.....	.....	.....	.....
21	.....	.....	74.76	20.94	.....	.....	.....
23	14.33	.....	.....	.....	.....	.....	.....
30	14.21	.....	.....	.....	.....	.....	.....
June 6	14.06	.....	.....	.....	.....	.....	.....
13	13.97	.....	.....	.....	.....	.....	.....
19	14.13	19.85	.....	.....	.....	28.80	50.83
24	.....	.....	.....	20.47	.....	.....	.....
25	.....	.....	74.89	.....	.....	.....	.....
26	13.99	19.79	.....	.....	10.67	28.88	50.81
July 3	13.87	19.59	74.83	20.30	.....	28.72	50.79
10	13.77	19.42	74.82	20.13	.....	28.57	50.82
17	13.69	19.25	74.76	19.93	.....	28.42	50.79
24	13.59	19.08	74.74	19.76	.....	28.27	50.84
31	13.45	18.91	74.70	19.59	.....	28.10	50.75
Aug. 7	13.33	18.74	74.65	19.42	.....	27.94	50.72
14	13.21	18.57	74.62	19.24	.....	27.75	50.69

Water levels in wells on Long Island--Continued

Date	379c	674c	CH-201	S-45	SU-75	SU-81	SU-86
<u>1936</u>							
Aug. 21	13.11	18.40	74.56	19.05	.....	27.57	50.63
28	13.02	18.24	74.52	18.86	.....	27.39	50.56
Sept. 4	12.91	18.08	74.43	18.68	.....	27.19	50.47
10	.....	.....	.....	.....	9.47	.....	.....
11	12.81	.....	74.39	18.49	.....	27.03	50.40
14	.....	17.88	.....	.....	.....	.....	.....
19	13.41	17.94	74.34	18.42	.....	27.02	50.29
26	13.19	17.98	74.33	18.45	.....	26.84	50.21
Oct. 3	13.20	17.90	74.33	18.35	.....	26.75	50.11
10	13.11	17.82	74.36	18.28	.....	26.68	50.04
17	13.10	17.81	74.39	18.23	.....	26.64	50.00
24	12.99	17.92	74.28	18.18	10.51	26.51	49.82
31	12.90	17.87	73.84	18.11	10.33	26.45	49.72
Nov. 7	12.83	17.81	74.21	18.02	10.22	26.40	49.59
14	12.78	17.77	74.18	17.94	10.24	26.35	49.51
21	12.70	17.70	74.17	17.83	10.14	26.27	49.38
28	12.64	17.64	74.07	17.78	10.17	26.20	49.26
Dec. 5	12.59	17.63	74.01	17.63	10.57	26.13	49.11
12	12.89	18.08	74.00	17.87	12.13	26.24	49.00
19	13.38	19.32	74.04	18.99	11.84	27.15	48.97
26	14.02	20.26	74.32	20.02	11.61	28.23	49.05

CROTON VALLEY

By C. E. Jacob

An investigation to determine the available ground-water supply in Croton Valley below Croton Dam was undertaken in July 1933 by the United States Geological Survey in cooperation with the City of Ossining. This investigation was conducted by D. G. Thompson, of the Geological Survey. In conjunction with this work three stream-gaging stations were established and maintained under the direction of A. W. Harrington, district engineer of the Geological Survey.

The area under consideration lies wholly within the narrow valley of the Croton River downstream from Croton Dam. Here the maximum width of the valley at stream level is about 500 feet. The old bedrock valley lies about 100 feet below the present river bed and is filled with unconsolidated gravel, sand, and clay.

The original program included nine observation wells (1, 2, 3, 4, 5, 6, 7, 8, and D2). One of these, well D2, was equipped with an automatic water-stage recorder. Measurements of water level in these wells were made weekly, or nearly so, from August 1933 to May 1936 under the direction of E. W. Applebee, city engineer of Ossining. In a manuscript report by D. G. Thompson and A. W. Harrington, dated December 1935, it was recommended that a much more detailed investigation be made.

In July 1936 a detailed investigation was started by the United States Geological Survey in cooperation with the City of Ossining. Test wells were put down to obtain geologic and hydrologic information. Eight of these wells were drilled, 11 were jetted, and 19 were dug by hand, bringing the total number of observation wells to 47. The drilled wells, one 4 inches, and the rest 6 inches in diameter, range in depth from 62 to 93 feet and are definitely artesian. The jetted wells are all 2 inches in diameter and range in depth from 14 to 78 feet. Those penetrating to depths greater than about 30 feet are probably artesian. Of the dug wells 15 are 8 inches in diameter, 3 are 9 inches in diameter, and 1 is 36 inches in diameter. All are cased with perforated galvanized-iron casing. They range in depth from 3 to 13 feet.

The wells constructed during the investigation now in progress are located on or near property owned by the City of Ossining, about 5,000 feet downstream from Croton Dam. In the accompanying tabulation the location of these wells is referred to well 10, which is centrally located.

With the exception of well 6, the original 9 wells are farther upstream and on the opposite side of the river from the Ossining property. Their location is referred to supply well 1 of the village of Croton-on-Hudson, which is 680 feet north of well 10.

At present the village of Croton-on-Hudson has three shallow supply wells, of the caisson type, connected by open-joint tile and pumped by suction. The average daily pumpage is less than 500,000 gallons. This withdrawal affects the water level in nearby wells.

The minimum flow of the Croton River is between 1 and 2 second-feet. The flood flow caused by the overflow of the dam is at times more than 3,000 second-feet. Change in stage in the river is accompanied by change in head in all the wells.

In the present investigation weekly water-level measurements were begun December 8, 1936. During drilling operations prior to that time occasional measurements were made at more frequent intervals. At present there are five automatic water-stage recorders in operation on different wells.

Observation wells in Croton Valley below Croton Dam

Well No.	Diameter (inches)	Location with reference to village of Croton supply well 1 (feet)	Measuring point	Altitude of measuring point (feet above mean sea level)	Depth of well (feet below measuring point)	Height of measuring point above land surface (feet)
1	2	190 SW., near N. bank of Croton River	Top of coupling	34.4	5.6	1.2
2	3	370 NE., about 70 feet from NW. bank of Croton River	Top of pipe	42.2	10.5	2.0
3	2	710 NE., on point of land between canal and River	Top of coupling	36.9	4.8	1.0
4	2	400 N., in small channel	do	37.1	5.3	1.5
5	2	1350 upstream near concrete wall	do	40.4	6.6	1.7
6	2	900 downstream, 185 feet S. of well 10	Top of pipe	35.4	49.2	2.7
7	8	100 S., about 30 feet from NW. bank of Croton River	do	36.7	5.9	.9
8	2	3300 upstream, on island near gaging station weir	Top of coupling	42.2	5.1	.6
D2	3 feet square	680 N.	Tack in floor of shelter	40.6	9.0	1.0

Observation wells in Croton Valley below Croton Dam--Continued

Well No.	Diameter (inches)	Location with reference to Well 10 (feet)	Measuring point	Altitude of measuring point (feet above assumed datum)	Depth of well (feet below measuring point)	Height of measuring point above land surface (feet)
9	2	1 N.	Top of coupling	99.59	78.4	0.2
10	6	-	Top of flange	100.91	90.8	1.4
11	6	55 N.	Top of pipe	99.76	91.8	0.6
12	6	55 S.	do	100.01	93.3	0.7
13	6	110 N.	do	99.30	81.5	0.6
14	6	110 S.	Top of flange	100.15	93.4	2.7
15	4	165 N.	Top of coupling	98.66	62.7	0.4
16	6	165 S.	Top of flange	99.17	92.7	1.7
17	6	600 N.	do	106.67	99.5	3.4
21	2	35 E.	Top of coupling	100.69	63.2	1.6
22	2	35 W.	do	102.70	79.4	3.9
23	2	110 E.	do	96.56	18.0	4.0
24	2	110 W.	do	99.65	49.8	2.9
25	2	150 NE.	do	100.62	21.2	3.3
26	2	150 SE.	do	97.71	22.3	3.4
27	2	150 NW.	do	99.92	43.6	3.2
28	2	150 SW.	do	93.35	47.4	2.7
29	2	300 NW.	do	96.75	65.0	3.4
30	2	300 SW.	do	99.88	43.8	3.8
D1	9	185 S.	Top of pipe	99.70	10.9	3.1
D3	8	25 S. 70 W.	do	99.58	9.9	1.3
D4	8	75 N. 85 W.	do	99.53	9.8	2.1
D5	8	175 N. 165 W.	do	97.30	7.9	3.7
D6	8	275 N. 163 W.	do	98.38	8.0	4.9
D7	8	125 S.	do	99.05	9.8	1.3
D8	8-9	25 S.	do	101.51	11.8	2.2
D9	8-9	75 N.	do	101.73	11.8	2.4
D10	8	175 N.	do	100.10	9.9	2.1
D11	8	275 N.	do	100.33	10.0	2.6
D12	8	375 N.	do	98.27	7.9	3.6
D13	8	275 N. 137 E.	do	98.38	7.8	1.3
D14	8	375 N. 150 E.	do	98.82	8.0	3.9
D15	8	497 N. 67 E.	do	100.46	10.0	3.2
D16	8	100 N. 105 E.	do	100.17	10.0	3.4
D17	8	110 S. 105 E.	do	99.94	10.0	5.7
D18	9	190 S. 197 W.	do	97.96	9.1	2.6
D19	9	208 N. 360 W.	do	97.38	7.0	1.6
D20	36	25 N.	do	100.35	12.9	1.2

Depth to water level below measuring point, in feet

Date	1	2	3	4	5	6	7	8
1933								
Aug. 8	3.29	9.75	3.37	3.90	4.81	8.33	....	3.22
15	3.59	9.99	3.36	3.83	4.83	8.25	....	3.24
21	3.36	....	3.30	3.72	4.73	8.27	....	3.20
Sept. 5	4.10	9.90	3.28	3.68	4.72	7.83	....	3.21
13	3.61	10.08	3.24	3.95	4.71	7.98	....	3.11
19	3.45	9.82	3.21	3.64	4.60	7.64	....	3.15
25	4.15	9.82	3.25	3.53	4.67	7.75	....	3.14
Oct. 3	3.50	9.95	3.28	3.79	4.68	7.76	....	3.16
10	3.50	10.00	3.31	3.85	4.68	7.79	....	3.17
18	3.53	9.95	3.28	3.87	4.70	7.80	....	3.12
25	3.51	9.85	3.25	3.78	4.63	7.73	....	3.14
Nov. 2	3.92	10.07	3.48	4.28	4.70	7.84	....	3.15
8	3.80	10.28	3.54	4.60	4.74	7.99	....	3.15

Depth to water level below measuring point, in feet--Continued

Date	1	2	3	4	5	6	7	8
1933								
Nov. 15	3.92	9.88	3.34	3.75	4.73	8.09	....	3.14
21	3.52	9.90	3.32	3.74	4.68	8.11	....	3.17
30	4.30	10.00	3.40	3.82	4.73	8.10	....	3.16
Dec. 6	4.10	9.88	3.36	3.76	4.72	8.06	....	3.16
15	3.75	10.00	3.39	3.87	4.75	8.20	....	3.17
22	4.16	9.80	3.29	3.52	4.60	7.90	....	3.12
28	3.53	9.92	3.30	3.75	4.66	7.92	....	3.02
1934								
Jan. 5	3.61	9.65	3.08	3.35	4.52	7.50	....	2.69
13	3.05	9.55	3.07	3.23	4.38	7.15	....	2.32
20	1.78	8.19	2.24	2.18	2.95	5.47	4.01	....
28	1.22	8.05	1.55	1.52	2.28	4.82	3.59	....
Feb. 4	....	8.72	....	....	3.23	5.75	4.54	....
11	....	9.60	....	....	4.16	6.85	5.90	....
18	2.95	9.87	3.00	3.28	4.32	6.11	....	....
25	....	9.18	....	....	....	6.13	....	....
Mar. 3	....	7.72	....	....	....	....	....	....
11	....	7.12	....	....	1.00	....	2.52	....
18	.51	7.15	.79	1.13	1.62	4.31	2.88	....
25	1.15	7.05	1.59	1.62	2.37	4.92	3.34	....
Apr. 1	.38	6.77	.15	.60	1.51	4.77	....	....
8	....	6.59	.51	.81	1.21	3.85	3.55	....
15	.55	7.22	.74	1.17	1.65	4.31	3.89	....
22	.55	7.52	.88	1.10	2.01	4.26	2.80	....
29	1.13	7.54	1.61	1.62	2.40	4.82	3.30	....
May 5	....	5.85	....	.32	.89	3.15	1.63	....
19	1.28	7.61	1.80	1.68	2.48	5.67	3.50	....
June 2	2.85	8.87	3.07	2.97	3.88	6.68	5.25	2.70
9	3.48	9.95	3.38	3.85	4.59	7.24	....	3.17
16	3.43	9.73	3.35	3.68	4.66	7.04	....	3.13
22	4.06	10.10	3.28	3.65	4.69	7.92	....	3.17
29	4.08	10.15	3.30	3.75	4.72	8.00	....	3.24
July 6	3.84	10.12	3.34	3.76	4.82	8.01	....	3.21
13	3.60	10.15	3.30	3.85	4.75	8.17	....	3.27
20	3.72	10.13	3.35	3.91	4.70	8.20	....	3.27
27	3.48	10.04	3.15	3.60	4.56	8.00	....	3.24
Aug. 3	3.60	10.10	4.37	3.90	4.78	8.25	....	3.27
10	3.56	10.19	3.38	3.82	4.88	8.08	....	3.68
17	3.65	10.13	3.32	3.90	4.72	8.13	....	3.51
24	3.56	10.00	3.23	4.00	4.75	8.19	....	3.28
31	3.70	9.95	3.38	4.00	4.79	8.37	....	4.29
Sept. 7	3.74	9.99	3.34	4.02	4.76	8.38	....	4.33
14	3.85	9.60	3.31	3.28	4.42	8.31	....	3.24
23	3.80	9.45	3.18	3.25	4.44	8.21	....	3.26
30	3.59	9.36	3.07	3.19	4.38	8.06	....	2.79
Oct. 7	2.94	9.46	3.17	3.38	4.57	7.64	....	3.09
14	3.18	9.73	3.25	3.65	4.70	7.86	....	3.18
21	3.25	9.72	3.30	3.74	4.69	7.90	....	3.23
28	3.21	9.81	3.14	3.64	4.81	7.94	....	3.25
Nov. 5	3.24	9.95	3.25	3.70	4.65	7.90	....	3.26
25	1.71	8.62	2.19	2.63	3.17	5.62	3.98	....
Dec. 2	.68	7.80	.95	1.78	2.09	4.58	2.92	....
9	2.35	8.77	2.63	2.72	3.58	5.82	5.10	....
1935								
Feb. 16	.72	7.35	1.10	1.40	2.13	4.74	4.40	....
25	1.65	8.55	2.00	2.15	2.80	5.45	4.05	....
Mar. 2	1.22	7.62	1.48	1.78	2.35	5.18	4.58	....
9	.68	7.19	1.05	1.35	1.85	4.58	4.26	....
16	.40	7.00	.80	1.30	1.63	4.32	4.00	....
23	1.07	7.80	1.42	1.62	2.20	4.89	4.61	....
Apr. 7	2.04	8.98	2.55	3.03	3.65	6.03	4.38	....
14	2.12	8.52	2.15	2.63	3.02	5.62	4.95	....
21	2.65	9.10	2.60	3.21	3.51	6.15	5.48	....
28	2.91	9.24	2.80	3.24	3.74	6.37	5.57	....
May 7	2.52	8.92	2.54	3.07	3.40	6.06	5.34	....
June 3	3.02	9.28	2.94	3.26	3.75	6.50	5.70	....
11	3.90	....	3.80	4.75	4.75	7.37	....	....
18	3.02	9.46	3.06	3.30	3.91	6.51	5.80	....

Depth to water level below measuring point, in feet--Continued

Date	1	2	3	4	5	6	7	8
1935--Continued								
July 11	3.59	9.85	3.40	4.00	4.65	8.29	....	3.20
18	3.52	9.79	3.31	4.01	4.52	8.14	....	3.32
26	3.41	9.80	3.29	3.75	4.54	8.12	....	3.19
Aug. 2	3.79	10.05	3.62	3.81	4.78	8.57	....	3.38
10	3.82	10.07	3.59	3.85	4.79	8.41	....	3.42
20	3.91	....	3.64	3.88	4.78	8.50	....	3.42
30	3.62	9.81	3.42	4.04	4.60	8.27	....	3.20
Sept. 5	3.68	10.01	3.61	4.18	4.74	8.35	....	3.34
12	3.90	10.00	3.38	3.86	4.80	8.62	....	3.34
Oct. 16	3.85	10.02	3.40	3.88	4.76	8.59	....	3.32
23	3.88	9.96	3.35	3.86	4.77	8.59	....	3.32
31	4.75	10.02	3.50	4.02	4.80	8.58	....	3.30
Nov. 14	4.95	10.10	3.30	3.98	4.80	8.73	....	3.28
22	4.92	10.04	3.25	3.98	4.92	8.69	....	3.22
29	4.72	9.97	3.08	3.75	4.68	8.51	....	3.09
Dec. 7	4.88	10.00	3.20	3.82	4.75	8.64	....	3.32
14	4.49	10.08	3.31	3.93	4.78	8.74	....	3.31
21	4.60	10.07	3.34	3.95	4.80	8.70	....	3.40
28	4.71	10.04	3.50	4.02	4.91	8.81	....	3.40
1936								
Jan. 3	3.80	10.00	3.10	3.68	4.58	8.20	....	3.00
10	4.37	9.84	3.25	3.73	4.72	8.51	....	3.25
24	4.62	....	3.28	3.83	4.80	8.60	....	3.21
31	4.70	....	3.30	3.88	4.85	8.62	....	3.28
Feb. 7	4.58	....	3.32	3.88	4.76	8.52	....	3.18
15	4.68	....	3.34	3.91	4.84	8.60	....	3.28
24	4.65	....	3.32	3.86	4.80	8.61	....	3.22
Mar. 2	4.42	10.00	3.00	3.75	4.60	8.42	....	3.01
9	4.59	10.10	3.24	3.80	4.75	8.60	....	3.15
16	....	7.04	....	.61	1.50	5.04	3.08	....
Apr. 5	1.24	7.96	1.81	1.75	3.12	4.72	3.58	....
20	.80	7.08	1.20	1.36	2.14	4.56	2.98	....
May 1	2.20	8.39	2.35	2.54	3.39	6.06	4.48	....
July 29	4.45	....	3.45	....	....	8.11	....	....
Sept. 10	3.76	....	3.44	4.69	4.74	8.22	....	3.06
Nov. 24	4.44	10.17	3.38	4.21	4.70	a10.48	....	3.05
Dec. 8	4.36	10.02	3.35	3.96	4.54	a10.20	....	....
15	3.63	9.87	3.31	3.79	4.80	a10.05	....	3.02
22	3.80	9.65	3.25	3.59	4.57	a 9.85	....	2.92
29	3.81	9.99	3.34	4.05	4.76	a10.03	....	2.98

a-Measuring point changed to top of coupling, 99.32 feet above assumed datum, owing to addition of 2.67 feet of pipe.

Date	9	11	12	13	14	15
1936						
Nov. 2	9.28	....	....	....	10.98	7.41
3	9.26	....	....	....	10.97	7.40
4	9.25	....	....	....	11.00	7.38
5	9.18	....	10.81	....	10.92	7.34
6	9.21	....	10.84	....	10.94	7.36
7	9.23	9.11	10.83	....	10.94	7.35
8	9.22	9.11	10.83	....	10.94	7.40
9	9.20	9.11	10.81	....	10.92	7.38
10	9.17	9.06	10.79	....	10.90	7.34
24	9.27	9.14	10.93	8.61	11.01	7.95
Dec. 8	8.73	8.99	....	8.40	10.86	7.73
15	8.79	8.94	....	8.30	10.72	7.62
22	8.62	8.80	....	8.14	10.52	7.51
29	8.58	8.93	....	8.30	10.70	7.44

Lowest daily water level, in feet below measuring point,
from recorder charts

Date	Well 10			Well 16			Well 17
	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Dec.
1936							
1	.....	10.59	.....	.....	10.21	.....	.....
2	.....	.....	.....	.....	10.22	.....	.....
3	.....	10.57	.....	.....	10.22	.....	.....
4	.....	10.58	10.61	.....	10.19	10.28	.....
5	.....	10.56	10.57	.....	10.17	10.25	.....
6	.....	10.58	10.58	.....	10.19	10.25	.....
7	.....	10.56	10.42	.....	10.19	10.09	.....
8	.....	10.56	10.46	.....	10.17	a10.07	c13.68
9	.....	10.55	10.52	.....	10.16	.....	13.81
10	.....	10.53	10.47	.....	10.16	.....	13.81
11	.....	10.55	10.38	.....	10.17	.....	13.76
12	.....	10.60	10.27	.....	10.20	.....	13.65
13	.....	10.59	10.32	.....	10.21	.....	13.58
14	.....	10.59	10.36	.....	10.21	.....	13.59
15	.....	10.59	10.39	.....	10.22	b 9.91	13.62
16	.....	10.58	10.42	.....	10.23	.....	13.65
17	.....	10.60	10.35	.....	10.23	.....	13.65
18	.....	10.60	10.34	.....	10.25	.....	13.64
19	.....	10.60	10.40	.....	10.25	.....	13.63
20	.....	10.62	10.33	.....	10.26	.....	13.63
21	.....	10.63	10.14	.....	10.27	.....	13.27
22	.....	10.59	10.20	.....	10.25	b 9.71	13.30
23	.....	.....	10.28	.....	.....	.....	13.36
24	.....	10.62	10.31	.....	10.29	.....	13.42
25	.....	10.63	10.31	.....	10.29	.....	13.45
26	c10.44	10.61	10.33	c10.09	10.29	.....	13.49
27	10.60	10.64	10.33	10.20	10.31	.....	13.52
28	10.63	10.65	10.36	10.24	10.32	.....	13.55
29	10.59	10.65	10.37	10.21	10.33	b 9.89	13.58
30	10.62	10.67	10.39	10.24	10.35	.....	13.62
31	10.61	.....	10.34	10.23	.....	.....	13.65

a Recorder removed.

c Recorder installed.

b Weekly tape measurement.

Depth to water level below measuring point, in feet

Date	21	22	23	24	25	26	27	28	29	30
1936										
Aug. 3	10.23	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	(a)	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	10.05	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	10.31	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	10.34	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	10.34	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	10.37	12.31	.....	.....	.....	.....	.....	.....	.....	.....
13	10.38	12.25	.....	.....	.....	.....	.....	.....	.....	.....
14	10.33	12.40	.....	.....	.....	.....	.....	.....	.....	.....
15	10.33	12.39	.....	.....	.....	.....	.....	.....	.....	.....
17	10.32	12.37	.....	.....	.....	.....	.....	.....	.....	.....
18	10.34	12.38	.....	.....	.....	.....	.....	.....	.....	.....
19	10.34	12.37	.....	.....	.....	.....	.....	.....	.....	.....
20	10.30	12.32	.....	.....	.....	.....	.....	.....	.....	.....
21	10.30	12.27	.....	.....	.....	.....	.....	.....	.....	.....
22	10.33	12.40	.....	.....	.....	.....	.....	.....	.....	.....
24	10.17	12.23	.....	.....	.....	.....	.....	.....	.....	.....
25	10.27	12.30	.....	.....	.....	.....	.....	.....	.....	.....
26	10.33	12.36	.....	.....	.....	.....	.....	.....	.....	.....
27	10.34	12.36	.....	.....	.....	.....	.....	.....	.....	.....
29	10.35	12.32	.....	.....	.....	.....	.....	.....	.....	.....
30	10.35	12.39	.....	.....	.....	.....	.....	.....	.....	.....
Sept. 4	10.37	12.40	.....	.....	.....	.....	.....	.....	.....	.....
5	10.36	12.42	.....	.....	.....	.....	.....	.....	.....	.....

a Pumped by suction for 4 hours at 5 gallons an hour.

Depth to water level below measuring point, in feet--Continued

Date	21	22	23	24	25	26	27	28	29	30
Sept. 8	10.34	12.41	....	....	....	....	....	....	....	....
10	10.37	12.44	....	....	....	....	....	....	....	....
11	10.35	12.42	....	....	....	....	....	....	....	....
28	10.32	12.36	....	....	....	....	....	....	....	....
30	10.29	12.33	5.72	9.22	....	7.47	....	....	....	....
Oct. 1	10.07	11.87	5.36	9.08	....	7.22	....	....	....	....
2	10.18	12.21	5.54	9.19	....	7.24	....	....	....	....
3	10.27	12.28	5.68	9.23	9.00	7.29	....	....	....	....
5	10.33	12.35	5.79	9.27	9.15	7.38	....	....	....	....
6	10.33	12.36	5.81	9.27	9.17	7.39	....	....	....	....
7	10.33	12.33	5.81	9.25	9.16	7.40	....	....	....	....
8	10.30	12.34	5.80	9.26	9.17	7.39	8.97	....	....	....
9	10.34	12.19	5.80	9.25	9.15	7.39	8.96	....	....	....
12	10.37	12.39	5.84	9.27	9.19	7.39	8.99	....	....	....
13	10.37	12.40	5.84	9.28	9.20	7.41	9.00	....	5.45	....
14	10.38	12.41	5.86	9.29	9.23	7.42	9.00	....	5.45	....
15	10.39	12.43	....	9.28	9.23	7.52	9.01	....	5.46	....
Nov. 2	10.25	12.25	5.71	9.14	8.95	7.51	5.10	3.70	5.25	10.37
3 b	10.28	12.23	5.69	9.18	8.94	7.26	6.28	3.75	5.23	10.48
4	10.64	12.23	5.66	9.05	8.91	7.16	6.73	3.62	5.23	10.42
5	10.46	12.21	5.62	9.03	8.72	7.15	6.99	3.63	5.17	10.39
6 c	10.37	12.20	5.60	9.17	8.64	7.23	7.12	3.67	5.18	10.37
7	10.20	12.20	5.70	9.13	8.90	7.24	7.36	3.66	5.21	10.49
8	10.27	12.20	5.65	9.16	8.90	7.24	7.55	3.70	5.22	10.45
9 d	10.28	12.19	5.67	9.09	8.87	7.25	7.66	3.73	5.21	10.40
10	10.53	12.15	5.64	9.11	8.85	7.18	8.34	3.63	5.10	10.45
24	10.16	12.27	5.73	8.96	8.99	7.30	7.37	3.45	5.26	....
Dec. 8	9.82	12.09	5.47	8.88	8.46	6.92	8.55	3.40	5.00	10.47
15	9.92	12.02	5.58	8.96	8.68	7.10	8.32	3.49	4.89	10.49
22	9.81	11.81	5.32	8.78	8.45	6.73	7.95	3.40	4.69	10.27
29	9.75	11.99	5.29	9.02	8.40	6.50	7.75	3.43	4.83	10.50

b Well 12 pumped for 3 hours at 50 gallons a minute.

c Well 11 pumped for 2 hours at 30 gallons a minute.

d Well 13 pumped for 1 hour at 30 gallons a minute.

Date	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
1936										
Oct. 8	9.87	....	9.22	8.56	6.22	6.71	8.81	10.67	10.59	....
9	9.85	....	9.19	8.53	6.19	6.68	8.75	10.59	10.56	....
10	9.84	....	....	....	....	....	....	....	....	....
12	9.86	....	9.20	8.56	6.25	6.72	8.77	10.66	10.60	8.72
13	9.87	....	9.22	8.57	6.26	6.73	8.78	10.68	10.62	8.74
14	9.88	....	9.24	8.59	6.28	6.73	8.79	10.70	10.64	8.76
15	9.89	....	9.23	8.59	6.27	6.73	8.80	10.70	10.64	8.77
Nov. 3	9.82	....	9.12	8.40	6.13	6.59	8.68	10.53	10.42	8.52
4	9.80	....	9.09	8.38	6.11	6.55	8.66	10.50	10.40	8.50
5	9.79	....	9.09	8.36	6.08	6.54	8.64	10.48	10.38	8.46
6	9.81	....	9.11	8.37	6.10	6.55	8.67	10.50	10.39	8.47
7	9.82	....	9.12	8.39	6.12	6.56	8.68	10.52	10.41	8.50
8	9.81	....	9.11	8.38	6.11	6.57	8.67	10.51	10.40	8.50
9	9.80	....	9.10	8.37	6.09	6.54	8.66	10.50	10.38	8.48
10	9.81	....	9.09	8.33	6.06	6.51	8.66	10.48	10.35	8.42
11	9.82	....	....	....	....	....	....	....	....	....
24	9.84	....	9.13	8.41	6.12	6.57	8.71	10.55	10.44	8.54
Dec. 8	9.81	6.98	9.11	8.33	6.08	6.51	8.64	10.43	10.34	8.44
15	9.84	6.84	9.10	8.34	6.05	6.47	8.68	10.48	10.36	8.42
22	9.75	6.57	9.07	8.26	5.99	6.38	8.60	10.37	10.26	8.34
29	9.84	6.82	9.12	8.35	6.05	6.41	8.69	10.49	10.36	8.44

Depth to water level below measuring point, in feet.										
Date	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
1936										
Nov. 3	8.40	6.34	5.98	6.08	a8.57	8.60	8.54	....	....	....
4	8.38	6.31	5.94	6.04	a8.44	8.55	8.50	....	....	....
5	8.34	6.29	5.89	5.99	a8.70	8.50	8.48	....	....	....
6	8.34	6.31	5.91	6.03	a8.66	....	....	....	....	....
7	8.39	6.33	5.96	6.08	a8.66	....	....	....	....	....
8	8.38	6.33	5.96	6.10	a8.88	8.55	8.54	....	....	....
9	8.37	6.30	5.94	6.07	8.45	8.53	8.49	....	....	....
10	8.28	6.26	5.84	5.95	a8.46	8.50	8.51	....	....	....
24	8.42	6.34	6.03	6.16	8.05	8.61	8.55	8.29	6.16	....
Dec. 1	....	....	....	....	9.15	....	....	....	....	....
4	....	....	....	6.43	....	....	....	....	....	....
8	8.33	6.29	5.93	6.16	8.10	8.43	8.44	8.26	6.00	9.15
15	8.28	6.24	5.87	6.02	7.82	8.48	8.60	8.22	5.88	9.16
22	8.21	6.17	5.79	5.87	7.96	8.32	8.43	8.11	5.32	9.07
29	8.29	6.20	5.82	5.91	8.02	8.47	8.47	8.23	5.75	9.17

a Lowest daily water level from recorder chart.

NORTH CAROLINA

STATE-WIDE PROJECT

By E. D. Burchard

The program of water-level measurements in wells in North Carolina, described in Water-Supply Paper 777 on page 130, was continued in 1936. The number of wells under observation during the year was reduced from 9 to 7 because the automatic water-stage recorder on the McCauley well at Chapel Hill was removed for repairs and has not been reinstalled and the Huffine well at Huffine's mill, near Gibsonville, was used for a source of water supply. Of these 2 wells only records of the water level in the Huffine well were given in Water-Supply Paper 777.

In general, the water levels in the observation wells reached the highest stages of record in April, 1936. Recovery from the low levels of 1935 was notably abrupt in January, and the fall depletion in 1936 was neither as extended or as low as in previous years, so that as a result the water levels stood comparatively high at the end of the year. The water level in the Kurfee well, at Mocksville, reached a stage of 14.86 feet above an arbitrary datum on April 6, 1936, which is 2.10 feet above the previous high recorded on April 25, 1935, and 12.12 feet above the lowest stage recorded on February 5, 1932. The water level in this well on December 31, 1936, stood 5.09 feet higher than on December 31, 1935.

Records of water level in 1936 in the 7 wells under observation are given in the following table. The water levels in each well are expressed in feet above an arbitrary datum which, together with the measuring point and other features of the well, are described in Water-Supply Paper 777. Water levels given for the Kurfee and Freuler wells are mean daily stages computed from automatic water-stage recorder charts and the water levels given for the other wells are individual measurements.

Freuler well at Roanoke Rapids, 1936

Stage in feet

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.93	8.90	9.36	9.27	8.52	6.82	6.14	5.62	4.86	4.13	3.69	3.33
2	6.06	8.83	9.30	9.54	8.50	6.74	6.18	5.57	4.85	4.07	3.66	3.36
3	....	8.83	9.27	9.82	8.45	6.71	6.12	5.60	4.80	4.03	3.66	3.35
4	....	9.51	9.14	9.74	8.35	7.02	6.12	5.55	4.77	4.00	3.63	3.31
5	....	9.56	9.08	9.74	8.23	7.14	6.10	5.50	4.72	3.98	3.64	3.28
6	....	9.48	8.91	10.05	8.14	7.00	6.03	5.47	4.70	3.95	3.60	3.28
7	....	9.48	8.81	10.76	8.02	6.93	6.01	5.45	4.68	3.93	3.58	3.50
8	....	9.28	8.71	10.70	7.97	6.81	6.01	5.41	4.66	3.90	3.56	3.80

Freuler well--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
9	....	9.47	8.67	10.64	7.93	6.72	5.98	5.43	4.62	3.96	3.54	3.74
10	....	9.64	8.76	10.72	7.81	6.67	5.95	5.40	4.59	4.16	3.53	3.73
11	....	9.57	9.61	10.65	7.76	6.64	5.91	5.35	4.57	4.21	3.50	4.15
12	....	9.44	9.76	10.53	7.73	6.58	5.92	5.30	4.54	4.08	3.67	4.52
13	....	9.64	9.71	10.40	7.70	6.55	5.88	5.28	4.52	3.98	3.85	4.55
14	....	10.56	9.59	10.25	7.57	6.51	5.85	5.26	4.50	3.95	3.78	4.57
15	....	10.55	9.51	10.20	7.53	6.49	5.83	5.24	4.46	3.92	3.75	4.58
16	....	10.51	9.46	10.12	7.50	6.45	5.79	5.23	4.43	3.97	3.65	4.68
17	....	10.46	9.72	9.97	7.45	6.36	5.74	5.20	4.43	4.39	3.61	4.79
18	....	10.44	9.83	9.88	7.40	6.33	5.73	5.17	4.40	4.25	3.59	4.76
19	....	10.28	9.76	9.74	7.37	6.44	5.71	5.15	4.35	4.13	3.54	4.79
20	....	10.20	9.73	9.63	7.28	6.40	5.75	5.13	4.32	4.05	3.55	4.85
21	....	10.17	9.72	9.55	7.18	6.37	5.80	5.08	4.28	4.02	3.55	4.78
22	....	10.06	9.45	9.41	7.14	6.31	5.71	5.05	4.27	3.98	3.50	4.75
23	10.31	9.92	9.32	9.34	7.14	6.36	5.66	5.03	4.24	3.95	3.47	4.71
24	10.09	9.87	9.28	9.20	7.15	6.37	5.70	5.02	4.23	3.91	3.45	4.74
25	9.91	9.81	9.25	9.06	7.12	6.30	5.63	4.98	4.19	3.87	3.45	4.72
26	9.81	9.76	9.15	9.03	7.05	6.26	5.61	5.02	4.15	3.85	3.44	4.70
27	9.69	9.70	9.15	8.86	7.06	6.25	5.59	5.05	4.14	3.82	3.40	4.70
28	9.49	9.52	9.41	8.77	7.00	6.25	5.53	5.00	4.11	3.80	3.38	4.68
29	9.34	9.42	9.40	8.66	6.93	6.20	5.50	4.98	4.15	3.78	3.37	4.65
30	9.34	....	9.39	8.58	6.93	6.18	5.50	4.94	4.14	3.77	3.35	4.64
31	9.12	....	9.35	....	6.87	....	5.58	4.89	....	3.73	....	4.72

Mean daily gage height taken from Au fuzee recorder chart

Kurfee well at Mocksville, 1936

Stage in feet

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.14	9.78	11.90	13.41	13.31	....	10.34	9.09	8.29	7.86	8.54	7.47
2	6.21	9.77	11.90	14.06	13.29	....	10.27	9.04	8.27	7.53	8.53	7.47
3	9.43	9.96	11.94	13.82	13.28	....	10.22	9.02	8.24	7.38	8.52	7.49
4	7.95	11.36	11.85	13.75	13.22	....	10.19	8.98	8.21	7.30	8.51	7.41
5	7.30	10.80	11.83	13.78	13.18	....	10.15	8.95	8.16	7.26	8.47	7.33
6	8.48	10.60	11.78	14.86	13.10	....	10.10	8.91	8.13	7.22	8.41	7.32
7	8.05	10.63	11.73	14.71	13.04	11.53	10.05	8.87	8.11	7.20	8.40	8.04
8	8.06	10.60	11.68	14.45	12.99	11.49	10.01	9.18	8.09	8.03	8.40	7.63
9	8.12	10.86	11.67	14.72	12.95	11.42	9.96	9.15	8.06	8.01	8.37	7.47
10	7.84	11.18	11.84	14.80	12.90	11.37	9.92	8.99	8.03	7.76	8.32	7.44
11	7.66	11.12	12.00	14.72	12.84	11.33	9.87	8.93	7.99	7.67	8.23	8.44
12	7.61	11.11	11.87	14.60	12.81	11.28	9.84	8.87	7.95	7.65	8.21	8.09
13	7.61	11.60	11.77	14.42	12.78	11.22	9.80	8.84	7.91	7.64	8.21	7.88
14	7.66	12.84	11.70	14.23	12.70	11.17	9.74	8.83	7.85	7.65	8.20	7.85
15	8.24	12.51	11.67	14.15	12.63	11.16	9.71	8.81	7.80	7.69	8.19	7.87
16	8.31	12.31	11.68	14.07	12.59	11.11	9.66	8.80	7.78	8.76	8.10	8.08
17	8.23	12.26	12.81	13.95	12.54	11.04	9.61	8.78	7.76	8.65	8.03	8.15
18	8.67	12.41	12.76	13.88	12.50	10.98	9.59	8.75	7.74	8.34	8.01	8.15
19	11.83	12.27	12.69	13.82	12.46	10.92	9.56	8.72	7.69	8.29	7.94	9.36
20	10.06	12.25	12.82	13.76	12.37	10.86	9.50	8.69	7.64	8.29	7.92	9.19
21	9.81	12.24	12.83	13.75	12.30	10.81	9.45	8.66	7.60	8.34	7.93	8.75
22	9.86	12.19	12.70	13.68	12.25	10.74	9.39	8.62	7.57	8.41	7.90	8.68
23	9.89	12.12	12.64	13.62	12.21	10.70	9.35	8.60	7.53	8.45	7.83	8.68
24	9.87	12.11	12.67	13.59	12.20	10.67	9.34	8.58	7.50	8.48	7.79	8.72
25	9.87	12.08	12.66	13.53	12.18	10.61	9.28	8.56	7.45	8.49	7.77	8.78
26	9.87	12.05	12.62	13.52	12.13	10.55	9.23	8.48	7.58	8.53	7.74	8.81
27	9.89	12.04	13.17	13.47	12.10	10.53	9.20	8.47	7.55	8.55	7.67	8.86
28	9.86	11.96	13.50	13.42	12.07	10.52	9.17	8.44	7.53	8.56	7.61	8.90
29	9.85	11.90	13.48	13.38	12.00	10.47	9.11	8.42	7.29	8.56	7.59	9.46
30	9.89	....	13.51	13.34	11.95	10.42	9.30	8.38	7.92	8.57	7.53	9.28
31	9.85	....	13.49	....	11.90	....	9.29	8.33	....	8.55	....	10.25

Mean daily gage height taken from Au continuous recorder chart

Brick pit near Goldsboro, 1936

Stage in feet

Date	Water level	Date	Water level	Date	Water level
Jan. 4, 1936	3.44	May 9, 1936	6.08	Sept. 5, 1936	4.56
11	(a)	16	5.72	12	4.30
18	(a)	23	5.44	19	4.00
25	6.36	30	5.16	26	3.88
Feb. 1	6.34	June 6	4.84	Oct. 3	3.88
8	6.34	13	4.94	10	3.82
15	6.40	20	4.76	17	3.68
22	(a)	27	5.24	24	4.07
29	6.40	July 4	5.40	31	4.04
Mar. 7	6.34	11	5.38	Nov. 7	3.90
14	6.32	18	5.10	14	4.20
21	6.38	25	4.98	21	4.56
28	6.34	Aug. 1	5.30	28	4.50
Apr. 4	6.22	8	5.62	Dec. 5	4.36
11	(a)	15	5.44	12	4.48
18	6.56	22	5.16	19	(a)
25	6.38	29	4.90	26	(a)
May 2	6.30				

Staff gage readings

a Water over gage.

Fishdam well near Northside, 1936

Stage in feet

Jan. 12, 1936	9.89	June 24, 1936	8.21	Oct. 21, 1936	8.22
Feb. 25	10.42	July 1	6.37	25	8.00
Mar. 3	5.07	8	8.33	Nov. 1	7.30
9	9.86	15	7.36	8	6.82
16	10.50	22	8.27	18	5.97
23	11.03	Sept. 2	6.22	22	8.09
Apr. 26	10.31	7	5.76	30	7.45
May 10	8.98	13	6.15	Dec. 6	7.21
26	7.18	20	6.29	13	9.76
June 4	6.30	28	5.97	20	10.28
11	7.10	Oct. 4	6.81	27	7.30

Gage readings taken from a tape gage.

Note: Counter weight fell in well last of July and was replaced Sept. 2.

Baldwin well at Blantyre, 1936

Stage in feet

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.82	6.97	8.48	9.71	10.88	11.49	10.32	8.51	7.20	6.15	5.64	6.24
2	6.12	7.77	8.53	10.21	10.95	11.46	10.24	8.47	7.16	6.11	5.65	6.28
3	6.42	7.79	8.56	10.17	10.99	11.43	10.17	8.44	7.14	6.05	5.66	6.29
4	6.32	7.67	8.59	9.94	11.03	11.41	10.12	8.37	7.10	6.03	5.71	6.18
5	6.29	7.62	8.86	9.93	11.06	11.37	10.06	8.31	7.06	5.99	5.72	6.27
6	6.43	7.51	8.71	10.98	11.10	11.35	9.99	8.24	7.02	5.96	5.74	6.19
7	6.33	7.52	8.76	10.74	11.12	11.34	9.89	8.21	6.98	5.93	5.75	6.41
8	6.36	7.51	8.77	10.44	11.16	11.32	9.86	8.18	6.96	5.91	5.78	6.31
9	6.36	7.56	8.80	10.41	11.19	11.30	9.81	8.12	6.90	5.92	5.81	6.31
10	6.31	7.58	8.86	10.48	11.22	11.26	9.77	8.10	6.89	5.90	5.82	6.37
11	6.25	7.62	8.93	10.38	11.25	11.23	9.71	8.08	6.86	5.87	5.83	6.38
12	6.21	7.63	8.93	10.34	11.28	11.19	9.67	8.03	6.83	5.83	5.86	6.31
13	6.21	8.61	9.21	10.30	11.32	11.15	9.62	7.98	6.79	5.79	5.90	6.26
14	6.17	8.72	9.22	10.28	11.34	11.11	9.57	7.90	6.75	5.77	5.92	6.31
15	6.27	8.74	9.11	10.29	11.34	11.09	9.51	7.87	6.71	5.73	5.96	6.28
16	6.28	8.79	9.11	10.32	11.37	11.06	9.46	7.80	6.67	6.43	5.96	6.43
17	6.31	8.75	9.19	10.35	11.39	11.01	9.38	7.77	6.65	6.28	5.97	6.31

Baldwin well at Blantyre, 1936--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
18	6.38	8.73	9.19	10.36	11.42	10.98	9.32	7.73	6.62	6.09	6.01	6.31
19	6.77	8.79	9.22	10.37	11.45	10.92	9.29	7.70	6.58	5.94	6.02	6.37
20	6.91	8.72	9.22	10.39	11.43	10.86	9.20	7.63	6.51	5.84	6.05	6.42
21	6.81	8.88	9.27	10.44	11.42	10.82	9.16	7.60	6.48	5.78	6.10	6.39
22	6.78	8.83	9.27	10.50	11.42	10.76	9.10	7.54	6.44	5.74	6.10	6.33
23	6.74	8.22	9.26	10.52	11.42	10.71	9.00	7.49	6.41	5.71	6.12	6.38
24	6.71	8.25	9.29	10.57	11.45	10.67	8.97	7.48	6.39	5.69	6.14	6.44
25	6.71	8.33	9.34	10.60	11.48	10.60	8.91	7.46	6.35	5.68	6.17	6.49
26	6.77	8.31	9.45	10.65	11.50	10.56	8.88	7.45	6.29	5.66	6.19	6.41
27	6.77	8.33	9.59	10.69	11.51	10.51	8.82	7.42	6.26	5.66	6.22	6.53
28	6.87	8.33	9.74	10.74	11.53	10.48	8.71	7.38	6.23	5.66	6.21	6.55
29	6.88	8.42	9.71	10.78	11.52	10.44	8.67	7.34	6.19	5.66	6.22	6.81
30	6.94	.....	9.71	10.83	11.51	10.39	8.62	7.28	6.19	5.66	6.23	6.55
31	6.93	.....	9.71	.....	11.49	.....	8.57	7.24	.....	5.66	.....	6.81

Daily gage readings taken from a tape gage.

Alston well near Nashville, 1936.

Stage in feet

Date	Water level	Date	Water level	Date	Water level
Jan. 1, 1936	11.63	May 23, 1936	11.41	Sept. 16, 1936	10.35
4	13.95	27	11.35	19	9.80
8	12.92	30	11.99	23	9.76
11	12.84	June 3	10.86	26	9.42
15	13.81	6	10.40	30	9.32
18	14.41	10	10.27	Oct. 3	9.10
22	15.20	13	10.07	7	9.16
25	15.00	17	10.35	10	9.36
29	14.12	20	10.72	14	9.17
Feb. 1	14.52	24	11.35	17	9.36
5	15.72	27	12.62	21	9.86
8	16.48	July 1	12.82	24	10.79
Mar. 14	15.80	4	13.10	28	10.73
18	16.54	8	13.24	31	10.50
21	15.54	11	12.96	Nov. 4	10.85
25	14.90	15	12.71	7	11.73
28	14.70	18	12.79	11	11.86
Apr. 1	14.54	22	12.38	14	12.36
4	15.38	25	12.26	18	12.91
8	18.47	29	13.82	21	13.91
11	16.84	Aug. 1	14.00	25	13.10
15	15.95	5	13.63	28	12.62
18	15.25	8	13.51	Dec. 2	12.86
22	14.73	12	13.04	5	13.00
25	13.90	15	12.86	9	13.84
29	13.65	19	12.24	12	14.63
May 2	13.54	22	11.95	16	19.23
6	12.95	26	11.61	19	17.03
9	12.46	29	11.38	23	16.53
13	12.00	Sept. 9	10.96	26	14.70
16	11.85	12	10.30	30	15.73
20	11.56				

Daily gage readings taken from a tape gage.

Governor Holt well at Haw River, 1936.

Stage in feet

Jan. 8, 1936	10.68	Feb. 28, 1936	10.04	Apr. 25, 1936	11.56
16	9.98	Mar. 6	8.74	May 4	10.56
24	11.48	14	9.60	11	9.80
30	10.86	23	11.90	19	8.78
Feb. 3	8.48	30	12.61	26	8.58
9	9.18	Apr. 6	13.12	June 1	7.48
14	12.04	14	12.06	8	6.78
21	9.60	20	10.86	15	6.40

Governor Holt well at Haw River, 1936--Continued

Date	Water level	Date	Water level	Date	Water level
June 22, 1936	6.18	Aug. 24, 1936	4.68	Nov. 2, 1936	3.72
29	6.32	31	3.91	9	3.86
July 8	6.20	Sept. 7	3.64	16	3.62
14	5.46	14	3.81	24	3.46
20	5.28	21	3.46	Dec. 1	3.42
27	4.98	28	3.46	9	4.62
Aug. 3	4.96	Oct. 5	3.52	15	7.46
10	5.78	12	3.86	28	7.22
17	5.02	19	4.36		

Gage readings taken from a tape gage

DEEP RIVER AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel, F. C. Ames, and H. W. Palm

The observation well program in the Deep River Area ^{1/} in Guilford, Forsyth, and Randolph Counties, near High Point, N. C., was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service, J. H. Stallings, project manager. Water-level measurements were made by members of the Geological Survey and the Soil Conservation Service about weekly, in 23 wells during 1936. Four of the wells were equipped with automatic water-stage recorders. Approximately 650 measurements were made during the year ending December 31, 1936.

The average weekly stage of the water levels is given in the following table. The water-level measurements of wells 11 and 13, which were dry at times, are included in the report, but they were not used in computing the average water levels. Well 17, for which water-level measurements are given in Water-Supply Paper 777, has been discontinued. Water-level measurements for wells 9 and 9 b, which are not included in Water-Supply Paper 777, are given in this report and were used in computing the average water levels. Thus 21 wells (1, 2, 4, 5, 6, 7, 8, 9, 9b, 10, 12, 14, 15, 18, 19, 20, 21, 23, 24, 25, and 27) were used in computing the average water levels given in this report for the entire period of record to December 31, 1936.

The water levels declined an average of more than half a foot from the beginning of observations in October 1934 to November 27, recovered about 1.5 feet by December 4, declined about 0.7 foot by December 18, and then recovered 0.8 foot by January 8, 1935.

The water levels generally rose until about April 2, when they reached the highest average stage during 1935, which was about 3.0 feet higher than on January 1. They then declined with few interruptions

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 136-139, 1936.

until December 27, when they attained the lowest average stage during the year, which was 5.63 feet lower than on April 2.

Heavy precipitation caused an average rise in the water levels of 3.8 feet between December 27, 1935 and January 4, 1936. The water levels rose and declined in response to the precipitation during January, February, and March. On April 10, 1936, they reached the highest average stage during the period of record and stood an average of 4.0 feet higher than on January 4. They then declined an average of 6.62 feet by September 25 but recovered nearly 2.0 feet by October 16. They declined during November but recovered by January 1, 1937, to an average stage 1.3 feet higher than on October 16.

The average water level on January 1, 1937, was 0.58 foot higher than on January 1, 1936, and 1.94 feet higher than on January 1, 1935.

Wells in the Deep River area in Guilford, Forsyth,
and Randolph Counties, N. C.

(The depth to the water level given in the next to last column is the depth below the measuring point on Jan. 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
1.	M. L. Willard, Deep River church	30	24	27.50	37.50
2.	Lindale Dairy Corporation, near High Point	39	18	28.75	38.75
4.	W. O. Atkins, near Colfax	34	18	32.85	42.85
5.	Isaac Tonkins, Groomtown.	54	48	47.15	57.15
6.	D. G. Berry, near Providence	32	36	18.23	28.23
7.	E. J. Welch, near High Point	28.5	34	23.57	33.57
8.	Welch Place, 1304 E. Lexington Ave., High Point	34	32	27.64	37.64
9.	W. C. Warner, Providence	22	20	12.00	a 22.00
9b.	do	22	20	20.83	30.83
10.	W. F. Beason, near Cedar Square Church	30	20	27.00	37.00
11.	Emery Taylor, Coletrane's mill	..	22	14.40	24.40
12.	John Blair estate, 1 mile SE. of High Point	37	30	37.10	47.10
13.	Blair's Dairy, 1 3/4 miles SE. of High Point	36.5	36	35.34	45.34
14.	Clodfelter's Dairy, 2 miles SE of High Point	23.5	24	19.00	29.00
15.	C. C. Robbins, 2 1/4 miles SE. of High Point	11	18	5.00	15.00
18.	Federal transient camp, 1/2 mile SE of Kernersville	22.5	30	22.73	32.73
19.	W. C. Michael, 1/2 mile S of Kernersville	48	36	46.47	56.47
20.	Dr. Bush, Archdale	27	30	24.30	34.30
21.	J. W. Young, 2 1/2 miles W of Randleman	31	24	28.00	38.00

a 21.36 feet after Jan. 3, 1936.

Wells in the Deep River area in Guilford, Forsyth,
and Randolph Counties, N. C.--Continued

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
23.	Mrs. Lonnie Pugh, New Salem	48.5	30	46.00	56.00
24.	H. L. Miller, $2\frac{1}{2}$ miles SW. of Trinity	31	22	11.00	b 21.00
25.	J. S. White, $1\frac{1}{2}$ miles S of Trinity	36	36	29.00	39.00
27.	Walter Lambeth, 4 miles SW. of Trinity	27	18	24.40	34.40

b 20.33 feet after Dec. 20, 1935.

Water levels in wells in the Deep River area in Guilford, Forsyth,
and Randolph Counties, N. C., in feet above the arbitrary datum.

Date	1	2	4	5	6	7	8	9
1934								
Oct. 16	10.00	9.75	10.43	9.81	5.72	.....	.....	7.80
23	9.83	9.57	10.43	9.86	5.77	10.25	8.78	6.67
30	9.68	9.51	10.41	9.83	5.64	10.20	8.74	5.39
Nov. 6	.....	9.34	10.39	9.89	5.60	10.18	8.65	4.59
9	9.29	9.21	.....	.....	.....	.....	.....	.....
13	9.16	9.13	10.35	9.86	5.59	10.16	8.53	4.04
21-22	9.07	9.12	10.28	9.83	5.65	10.13	8.35	3.39
27	9.42	9.27	10.21	9.81	5.60	10.11	8.40	3.09
Dec. 3-4	.....	9.47	10.15	10.05	7.07	10.10	9.33	10.92
11	9.84	9.37	10.11	9.88	6.34	10.07	9.66	7.85
18	9.81	9.36	10.11	9.82	6.42	10.05	9.64	6.24
26	9.83	9.38	10.06	9.87	6.93	10.02	9.75	7.33
1935								
Jan. 2-3	10.16	9.41	9.97	10.04	12.26	10.00	10.11	10.94
8	.....	9.59	10.05	9.92	7.70	9.99	10.34	9.55
15	10.35	9.65	10.05	9.87	8.05	9.96	10.64	9.95
22-23	10.39	9.85	10.12	9.90	8.14	9.94	10.74	8.08
29-30	10.56	.....	10.16	9.89	8.45	9.92	10.87	8.00
Feb. 4-5	.....	9.97	10.24	9.89	8.56	9.91	10.91	6.84
12	10.55	9.86	10.28	9.85	8.66	9.87	10.75	5.74
19	10.80	10.26	10.38	10.10	11.28	9.85	11.54	9.78
26	10.86	10.29	10.49	10.04	9.77	9.82	11.62	8.46
Mar. 5	.....	10.40	10.56	9.98	9.70	10.00	11.48	6.97
12	11.44	.....	10.67	10.26	10.31	9.78	12.86	6.51
19	11.36	10.70	10.73	10.08	11.00	10.24	13.37	10.42
27	11.69	10.88	10.85	10.27	15.63	10.26	14.92	14.02
Apr. 2	.....	11.14	11.01	10.29	17.41	10.76	15.66	16.02
9-10	12.22	11.46	11.10	10.31	14.60	11.19	15.04	13.35
16	12.13	11.60	11.23	10.27	13.75	11.09	14.57	10.43
23	12.43	11.80	11.37	10.42	16.40	11.40	15.57	8.95
30	.....	11.94	11.51	10.36	14.93	11.37	15.11	9.64
May 7	12.11	11.98	11.66	10.36	13.90	11.23	14.59	.....
14	12.45	12.04	11.81	10.43	13.30	11.10	14.40	.....
21	12.56	12.13	11.93	10.61	14.12	10.99	14.40	8.03
28	12.38	12.23	12.00	10.46	13.01	10.89	14.34	7.52
June 3	12.38	12.32	12.12	10.47	12.35	10.82	14.06	6.04
10	12.10	12.35	12.21	10.51	11.42	10.75	13.87	4.82
17	11.82	12.33	12.28	10.53	10.03	10.70	13.55	3.88
24	11.48	12.11	12.30	10.49	8.42	10.66	13.16	2.96
July 1	11.13	12.11	12.33	10.49	6.97	10.62	12.78	2.21
8	10.79	12.13	12.35	10.54	6.13	10.58	12.51	1.59
15-16	10.61	12.01	12.32	10.55	5.80	10.55	12.70	3.50
22	10.44	12.03	12.25	10.51	5.58	10.52	12.73	2.04
29	11.31	12.14	12.20	10.53	5.20	10.49	12.84	1.27
Aug. 5	10.14	12.04	12.11	10.51	4.47	10.47	12.48	.85
12	9.94	11.93	12.02	10.50	3.88	10.46	12.11	.45
19	9.24	11.83	11.93	10.47	3.31	10.42	11.82	-.04

Water levels in wells in the Deep River area in Guilford, Forsyth, and Randolph Counties, N. C., in feet above the arbitrary datum.--Continued

Date	1	2	4	5	6	7	8	9
1935								
Aug. 26	9.55	11.75	11.83	10.44	2.91	10.40	11.57	- .56
Sept. 2	9.36	11.62	11.72	10.41	2.52	10.37	11.31	-1.10
9	9.58	11.79	11.61	10.42	2.73	10.34	11.28	-1.12
16	9.54	11.70	11.49	10.35	2.83	10.32	11.09	-1.55
23	9.40	11.56	11.37	10.32	2.46	10.30	10.91	-1.98
30	9.33	11.50	11.27	10.32	2.16	10.30	10.77	-2.25
Oct. 7	9.23	11.28	11.15	10.24	1.84	10.26	10.55	(a)
11	9.17	11.26	11.09	10.24	1.69	10.24	10.45	(a)
18	9.06	11.17	10.98	10.21	1.40	10.22	10.29	(a)
24	8.93	10.94	10.86	10.17	1.15	10.20	10.14	(a)
25	8.91	10.90	10.84	10.15	1.12	10.20	.....	.....
Nov. 1	8.81	10.88	10.74	9.87	1.00	10.17	9.94	.....
8	8.76	10.74	10.62	9.88	1.23	10.15	9.80	.....
15	8.86	10.59	10.49	10.13	1.58	10.13	9.73	(a)
22	9.00	10.58	10.39	10.10	1.88	10.11	9.65	.....
29	9.02	10.51	10.29	10.13	2.05	10.09	9.53	.....
Dec. 6	8.90	10.22	10.18	10.00	2.19	10.02	9.40	.....
13	9.03	10.34	10.11	10.09	2.42	10.04	9.34	.....
20	8.96	.....	10.01	10.02	2.80	10.03	9.46	.....
27	8.93	9.96	9.91	9.94	3.00	10.00	9.31	.....
1936								
Jan. 4	12.59	10.27	10.62	10.67	17.28	10.74	13.48	3.55
10	10.69	9.93	9.95	10.34	14.61	12.36	14.11	11.07
17	10.64	10.44	10.00	10.02	6.37	11.82	12.54	8.05
24	11.47	10.57	10.23	10.09	7.67	11.95	14.30	10.51
31	11.33	10.61	10.30	9.96	6.94	11.73	13.18	8.10
Feb. 7-8	11.56	10.55	10.43	10.10	10.51	11.92	14.86	11.45
14-15	13.06	10.91	11.54	10.31	18.96	14.78	21.93	15.98
21	12.42	11.15	10.85	10.16	10.00	12.12	16.76	13.84
28	12.21	11.15	10.98	10.06	9.27	11.85	15.57	9.95
Mar. 6	12.06	11.23	11.18	10.07	9.31	11.63	14.80	8.15
13	11.91	11.28	11.36	10.21	12.48	11.76	14.83	8.19
20	12.40	11.13	11.44	10.46	10.73	12.14	17.08	16.35
27	12.31	11.64	11.69	10.28	11.09	11.85	16.32	11.07
Apr. 3	13.12	11.83	12.20	10.56	17.73	13.48	20.50	16.70
10	13.87	12.50	12.16	10.77	18.96	12.11	22.40	17.81
17	13.68	12.72	12.26	10.50	14.69	12.03	20.23	12.68
24	13.36	12.57	12.43	10.44	14.36	12.35	18.26	9.59
May 1	13.02	12.51	12.63	10.45	13.94	11.69	17.09	7.34
8	12.67	12.41	12.81	10.47	13.18	11.44	15.82	6.31
15	12.28	12.24	12.95	10.45	11.85	11.32	15.60	4.97
22	11.89	12.00	13.07	10.42	10.40	11.26	12.66	3.93
29	11.55	12.08	13.19	10.52	8.82	11.17	14.43	3.13
June 5	11.18	11.81	13.22	10.46	7.48	11.09	15.23	2.33
12	10.89	11.72	13.27	10.47	6.75	10.99	14.42	1.74
19	10.58	15.57	13.26	10.47	5.94	10.80	13.15	1.23
26	10.39	11.40	13.20	10.45	5.79	10.80	.....	1.02
July 3	10.17	11.30	13.14	10.47	5.19	10.75	12.55	.63
10	10.01	11.28	13.06	10.49	4.92	10.71	12.36	.30
17	9.94	11.21	12.96	10.50	4.47	10.69	12.39	- .10
24	9.77	11.22	12.86	10.52	3.97	10.65	11.89	- .56
31	9.76	10.91	12.69	10.58	3.58	10.61	11.70	- .15
Aug. 7	9.59	10.90	12.62	10.53	3.45	10.59	11.64	- .95
14	9.56	10.87	12.53	10.59	3.70	10.56	11.50	.62
21	9.46	10.78	12.43	10.57	4.08	10.53	11.28	- .08
28	9.53	10.72	12.35	10.81	3.35	10.50	11.06	- .80
Sept. 4	9.58	10.60	12.26	10.53	2.61	10.46	10.84	1.33
11	9.06	10.54	12.21	10.53	2.63	10.43	10.63	1.73
18	8.91	10.51	12.14	10.54	2.26	10.41	10.42	2.08
25	8.76	10.34	12.08	10.48	1.86	10.40	10.21	2.14
Oct. 2	9.12	10.20	12.06	10.50	1.71	10.36	10.14	-2.15
9	10.18	10.27	11.89	10.60	2.74	10.38	10.21	9.03
16	9.61	10.34	11.82	10.50	3.22	10.28	10.42	6.00
23	9.63	10.30	11.78	10.52	3.54	10.31	10.83	7.78
30	9.61	10.24	11.77	10.52	4.42	10.32	10.76	5.71
Nov. 6	9.47	10.10	11.72	10.46	4.54	10.29	10.49	4.46

a Well dry.

Water levels in wells in the Deep River area in Guilford, Forsyth, and Randolph Counties, N. C., in feet above the arbitrary datum.--Continued

Date	1	2	4	5	6	7	8	9
1936								
Nov. 13	9.48	10.17	11.73	10.53	5.35	10.25	10.31	3.88
20	9.37	10.10	11.69	10.52	4.68	10.21	10.21	3.40
27	9.23	9.97	11.65	10.49	4.63	10.23	10.12	2.86
Dec. 4	9.12	9.75	11.60	10.44	4.79	10.18	9.94	2.47
11	9.20	9.89	11.55	10.59	4.40	10.20	10.19	7.22
18	9.11	10.00	11.53	10.57	11.25	10.13	10.94	10.63
24	9.53	10.00	11.50	10.44	6.93	10.33	11.48	8.41
1937								
Jan. 1	10.27	10.21	12.21	10.77	10.69	10.73	14.22	12.00

Date	9B	10	11	12	13	14	15	18
1934								
Nov. 13-14	....	.....	.....	9.43	9.31	9.41	4.98	9.91
21-22	....	.....	.....	9.32	9.44	9.31	4.40	9.93
27-28	....	8.51	(a)	9.26	9.28	9.22	4.39	9.88
Dec. 3-4	....	9.04	11.88	9.56	9.64	9.97	11.76	9.83
11	....	9.43	9.74	9.65	9.95	9.79	9.45	9.91
17-18	....	9.58	8.56	9.74	9.95	9.67	7.93	9.99
24-26	....	9.76	9.10	9.82	9.95	9.65	9.14	9.97
1935								
Jan. 2-3	....	.....	.....	.....	.....	.....	.....	.....
8	....	10.24	10.89	10.08	10.05	10.10	11.21	10.02
15	....	10.40	10.36	10.20	10.17	10.23	10.88	10.07
22-23	....	10.51	8.84	10.30	10.21	10.19	9.61	10.10
29-30	....	10.54	8.50	10.35	10.45	10.26	10.04	10.12
Feb. 4-5	....	10.61	7.59	10.32	10.27	10.19	9.02	10.10
12	13.94	10.63	6.72	10.42	10.27	10.29	8.94	10.28
19	15.61	10.95	14.01	10.58	10.43	11.15	12.22	10.29
26	15.58	11.18	11.56	10.70	10.88	10.98	10.80	10.59
Mar. 5	14.23	11.54	10.48	10.75	10.52	10.94	9.51	10.40
12	14.25	11.40	11.34	10.90	10.60	11.04	10.69	10.75
19	16.56	11.72	13.52	11.00	10.84	11.65	11.57	10.54
27	17.76	13.05	16.93	11.19	11.04	12.44	12.68	10.77
Apr. 2	19.35	12.29	18.78	11.31	11.22	12.74	12.76	10.96
9-10	19.04	12.91	15.58	11.47	11.41	12.71	12.26	10.94
16	17.70	14.16	12.82	11.62	11.53	12.58	11.10	11.05
23	18.08	13.51	16.44	11.76	11.69	13.14	12.47	11.24
30	16.81	13.89	13.45	11.95	11.86	13.04	11.01	11.26
May 7	15.62	13.85	11.37	12.03	11.95	13.02	10.19	11.56
14	13.64	13.85	9.72	16.09	11.99	12.95	10.76	11.38
21	15.29	13.85	11.82	12.21	12.04	13.20	12.79	11.45
27-28	14.88	13.89	10.69	12.22	12.03	12.78	11.38	11.46
June 3	14.06	13.65	9.17	12.26	11.98	12.63	10.17	11.50
10	13.30	13.28	8.09	12.22	11.90	12.47	9.47	11.48
17	12.55	12.77	7.19	12.11	11.77	12.31	8.76	11.45
24	11.80	12.08	6.46	11.86	11.56	12.11	8.20	11.37
July 1	11.15	11.51	5.79	11.62	11.37	11.94	7.61	11.29
8	10.65	11.11	5.18	11.47	11.18	11.77	7.35	11.25
15-16	11.40	10.78	4.74	11.55	11.17	11.84	11.18	11.18
22	10.70	10.51	4.24	11.65	11.15	11.61	10.24	11.09
29	10.11	10.21	3.81	11.71	11.11	11.47	9.56	10.98
Aug. 5	9.59	9.74	3.60	11.59	11.01	11.32	8.39	10.84
12	9.13	9.36	(a)	11.45	10.89	11.17	7.65	10.74
19	8.69	8.99	(a)	11.28	10.76	11.02	7.02	10.64
26	8.26	8.70	(a)	11.10	10.62	10.88	6.67	10.53
Sept. 2	7.84	8.46	(a)	10.92	10.48	10.75	6.14	10.42
9	7.80	8.56	(a)	10.89	10.40	10.67	8.81	10.37
16	7.41	8.24	(a)	10.85	10.30	10.54	7.87	10.26
23	7.03	8.05	(a)	10.74	10.18	10.43	6.82	10.15
30	6.69	7.89	(a)	10.52	10.06	10.32	6.14	10.05
Oct. 7	5.88	7.70	(a)	10.45	9.88	10.19	5.61	9.95
11	5.86	7.60	(a)	10.38	9.88	10.14	5.36	9.89
18	4.82	7.41	(a)	10.23	9.88	10.03	4.96	9.80

a Well dry

Water levels in wells in the Deep River area in Guilford, Forsyth, and Randolph Counties, N. C., in feet above the arbitrary datum.--Continued

Date	9B	10	11	12	13	14	15	18
1935								
Oct. 23-24	5.46	7.21	(a)	10.11	9.67	9.95	4.70	9.79
25	5.43	7.18	(a)	10.06	9.62	9.92	4.62	9.75
Nov. 1	5.18	7.06	(a)	9.94	9.59	9.82	4.84	9.62
8	5.11	7.02	(a)	9.82	8.53	9.74	5.55	9.57
15	4.89	7.00	(a)	9.76	8.83	9.74	7.62	9.57
22	3.91	7.03	(a)	9.75	8.99	9.56	5.98	(a)
29	6.27	7.05	(a)	9.69	9.09	9.60	5.65	(a)
Dec. 6	4.20	7.00	(a)	9.59	....	9.38	4.99	(a)
13	4.21	7.01	(a)	9.58	8.55	9.57	4.87	(a)
20	3.99	7.00	(a)	9.55	9.00	9.28	6.20	(a)
27	4.04	6.96	(a)	9.49	8.93	9.18	5.25	(a)
1936								
Jan. 3-4	7.08	8.04	(a)	9.50	8.91	10.88	13.27	9.48
10	13.51	8.46	15.67	10.22	9.73	12.20	13.17	9.03
17	13.30	9.25	12.07	10.65	10.04	11.41	12.20	9.34
24	14.65	9.96	14.56	11.07	10.08	12.11	12.04	9.84
31	13.83	10.32	11.71	11.55	10.78	12.00	11.26	9.83
Feb. 7-8	15.45	10.73	14.67	11.64	11.09	12.53	12.65	9.85
14-15	17.39	11.20	18.08	12.02	11.43	13.40	13.20	10.36
21	18.66	11.92	14.79	12.40	11.90	13.65	12.45	9.88
28	17.03	12.17	12.09	12.65	12.19	13.61	11.45	10.29
Mar. 6	15.80	12.35	10.09	12.84	12.43	13.56	10.73	10.37
13	15.50	12.51	10.40	12.98	12.58	13.68	11.24	10.41
20	19.57	12.97	16.49	13.16	12.74	14.11	12.68	10.63
27	17.99	13.23	13.72	13.33	12.83	14.01	11.61	10.64
Apr. 3	20.55	13.76	17.24	13.58	13.01	15.18	12.89	10.92
10	25.39	14.77	19.29	14.04	13.42	16.77	13.12	11.23
17	20.14	15.28	14.36	14.36	13.76	16.61	11.71	11.22
24	17.71	15.43	12.09	14.57	14.01	16.21	10.80	11.30
May 1	16.06	15.44	10.26	14.68	14.16	15.85	10.02	11.37
8	19.78	15.23	8.90	14.66	14.12	15.50	9.42	11.43
15	13.75	14.70	7.87	14.52	13.95	15.12	8.77	11.45
22	12.86	14.06	6.99	14.29	13.69	14.74	8.17	11.41
29	12.08	13.45	6.25	14.07	13.45	14.44	7.77	11.40
June 5	11.39	12.81	5.78	13.74	13.12	14.10	7.29	11.34
12	10.48	12.36	5.00	13.46	12.83	13.80	6.96	11.32
19	10.32	11.89	3.45	13.22	12.57	13.51	7.79	11.23
26	10.18	11.60	4.06	12.97	12.30	13.24	8.89	11.17
July 3	9.73	11.23	3.61	12.85	12.07	12.99	8.12	10.97
10	9.29	10.95	3.54	12.61	11.91	12.81	8.86	10.97
17	8.83	10.72	(a)	12.44	11.90	12.61	8.79	10.88
24	8.46	10.43	(a)	12.25	(a)	12.42	7.65	10.21
31	8.65	9.78	(a)	12.01	(a)	12.37	10.82	10.73
Aug. 7	8.07	9.71	(a)	11.88	(a)	12.40	9.49	10.42
14	9.78	10.54	(a)	12.08	(a)	12.55	11.05	10.64
21	8.98	10.33	(a)	12.01	(a)	12.10	9.19	10.58
28	8.15	9.88	(a)	11.81	(a)	11.94	8.39	10.50
Sept. 4	7.80	9.66	(a)	11.65	(a)	11.80	7.67	10.42
11	7.31	9.46	(a)	11.52	(a)	11.68	9.38	10.36
18	6.95	9.24	(a)	11.42	(a)	11.55	7.54	10.30
25	6.59	9.00	(a)	11.24	(a)	11.42	6.71	10.21
Oct. 2	6.29	8.86	(a)	11.20	(a)	11.57	11.11	10.20
9	13.26	9.06	(a)	11.32	(a)	11.90	12.94	10.17
16	12.75	9.87	(a)	11.56	(a)	11.68	10.60	10.20
23	13.91	10.40	(a)	11.80	(a)	12.13	11.22	10.18
30	13.21	10.54	5.25	11.90	(a)	12.06	9.60	10.15
Nov. 6	12.37	10.45	7.52	11.81	(a)	11.94	8.53	10.10
13	11.90	10.47	3.95	11.79	(a)	11.87	9.99	10.08
20	11.63	10.40	3.54	11.70	(a)	11.68	8.62	10.07
27	11.18	10.36	(a)	11.56	(a)	11.54	7.78	8.99
Dec. 4	10.90	10.24	(a)	11.43	(a)	11.38	7.35	9.94
11	12.83	10.43	(a)	11.54	(a)	11.73	12.06	9.97
18	14.75	10.83	(a)	11.75	(a)	12.16	12.19	9.95
24	14.54	11.11	(a)	11.85	(a)	12.28	11.76	10.02
Dec. 31-								
Jan. 1	15.48	11.33	(a)	11.99	(a)	12.45	11.60	10.24

a Well dry.

Water levels in wells in the Deep River area in Guilford, Forsyth, and Randolph Counties, N. C., in feet above the arbitrary datum.--Continued

Date	19	20	21	23	24	25	27	Average
1934								
Nov. 13-14	9.94	....	....	....	....	....	....	....
21-22	9.96	....	....	....	....	....	....	....
26-27	9.94	....	....	....	4.83	8.24	7.58	8.10
Dec. 3-4	9.99	....	....	....	9.52	8.44	12.73	9.87
11	9.96	....	....	....	9.08	8.80	10.75	9.41
17-18	9.97	9.85	....	....	8.42	8.73	9.81	9.17
24-26	9.97	9.89	....	....	8.82	8.74	9.64	9.36
1935								
Jan. 2-3	....	....	....	....	....	8.92	....	....
8	10.02	10.13	....	....	11.58	8.97	10.42	9.99
15	10.00	10.26	9.42	....	11.60	9.25	12.39	10.17
22-23	10.06	10.40	9.53	....	10.50	9.29	10.75	9.91
29-30	10.01	10.50	9.70	....	10.70	9.40	10.56	10.00
Feb. 4-5	10.07	10.55	9.80	10.14	10.00	9.46	10.15	9.83
12	10.06	10.61	9.87	10.15	9.18	9.38	9.41	9.93
19	10.12	10.79	10.40	11.45	15.03	9.85	7.95	10.97
26	10.18	10.96	10.29	10.61	12.45	9.91	13.27	10.88
Mar. 5	10.15	11.15	10.34	9.37	10.88	8.94	11.31	10.43
12	10.39	11.19	10.65	9.48	10.96	8.86	10.69	10.65
19	10.20	11.37	10.73	11.23	13.75	9.60	11.28	11.38
27	10.29	11.57	11.63	13.07	16.32	11.59	13.26	12.57
Apr. 2	10.31	11.85	12.18	13.95	16.40	12.05	14.19	13.13
9-10	10.28	12.05	11.59	12.29	15.40	12.14	13.05	12.64
16	10.35	12.17	11.42	11.43	13.09	12.30	11.94	12.19
23	10.17	12.56	11.99	13.49	14.46	12.72	12.82	12.69
30	10.45	12.46	11.68	11.76	11.99	12.49	11.78	12.27
May 7	10.51	12.52	11.79	12.29	10.45	12.21	11.13	12.14
14	10.57	12.69	11.60	11.66	9.46	12.03	10.80	12.15
21	10.67	12.69	13.38	15.47	....	12.03	10.82	12.43
28-29	10.67	12.71	11.73	12.58	9.03	11.80	10.54	11.83
June 3	10.75	12.73	11.57	12.05	8.42	12.69	10.39	11.59
10	10.79	12.73	11.37	12.02	7.75	12.51	10.23	11.32
17	10.86	12.70	11.03	12.04	7.12	12.27	10.06	11.01
24	10.87	12.69	10.82	12.05	6.50	11.98	9.91	10.65
July 1	10.93	12.45	9.88	12.04	5.92	10.67	9.72	10.26
8	10.98	12.31	9.72	12.02	5.53	10.56	9.72	10.05
15-16	....	12.17	10.35	13.14	....	10.39	13.12	10.79
22	11.02	12.08	9.86	12.17	....	10.21	11.03	10.41
29	11.05	11.97	9.60	12.00	4.77	10.08	10.34	9.99
Aug. 5	11.06	11.89	9.01	11.90	4.49	9.84	9.65	9.63
12	11.07	11.76	8.65	11.80	4.23	9.62	9.20	9.59
19	11.07	11.61	8.36	11.67	3.98	9.42	8.89	9.15
26	11.08	11.47	8.04	11.54	3.76	9.28	8.64	8.94
Sept. 2	11.06	11.32	7.84	11.39	3.53	9.10	8.42	8.73
9	11.06	11.20	8.12	11.37	3.43	9.05	....	8.88
16	11.02	11.08	7.78	11.16	3.25	8.92	11.08	8.82
23	11.00	10.95	7.45	11.01	3.07	8.80	9.68	8.57
30	10.99	10.83	7.30	10.88	2.92	8.69	8.88	8.55
Oct. 7	10.94	10.69	7.11	10.67	2.06	8.46	8.35	8.11
11	10.93	10.61	6.99	10.59	2.06	8.39	8.15	8.04
18	10.90	10.48	6.73	10.43	2.04	8.24	7.86	7.85
23-24	10.87	10.58	6.57	10.29	2.36	8.14	7.69	7.79
25	10.83	10.32	6.58	10.27	2.26	8.10	7.63	7.75
Nov. 1	10.81	10.21	7.70	10.11	2.15	8.01	8.17	7.75
8	10.75	10.09	7.55	9.98	2.05	7.95	12.77	7.95
15	10.68	9.98	7.12	9.85	2.22	7.92	15.90	8.16
22	10.66	9.91	7.16	9.75	2.31	7.92	11.67	7.83
29	10.62	9.84	7.39	9.64	2.18	7.86	10.59	7.87
Dec. 6	10.52	9.76	7.25	9.52	2.00	7.72	9.08	7.68
13	10.55	9.72	7.73	9.44	....	7.72	8.84	7.62
20	10.47	9.66	7.50	9.36	2.28	7.76	8.12	7.62
27	10.40	9.61	7.57	9.27	2.24	7.64	7.62	7.50
1936								
Jan. 3-4	10.52	9.72	15.65	14.51	....	8.07	21.31	11.36
10	10.43	10.04	11.33	14.60	9.93	8.83	28.97	12.08

Water levels in wells in the Deep River area in Guilford, Forsyth, and Randolph Counties, N. C., in feet above the arbitrary datum.--Continued

Date	19	20	21	23	24	25	27	Average
1936								
Jan. 17	10.29	10.25	9.19	10.62	10.06	8.81	16.43	10.55
24	10.34	10.52	9.78	11.04	13.73	9.61	17.66	11.39
31	10.28	10.67	9.52	10.05	11.69	9.49	13.26	10.75
Feb. 7-8	10.22	10.90	10.55	11.64	.....	10.12	20.62	11.91
14-15	9.45	11.46	16.75	15.95	17.72	12.08	29.97	14.68
21	10.30	11.42	10.84	12.14	.....	10.88	29.85	13.08
28	10.24	11.55	10.65	10.82	.....	10.86	15.55	11.89
Mar. 6	10.36	11.65	10.70	10.58	11.73	10.81	13.06	11.57
13	10.31	11.75	11.04	10.60	11.73	10.83	12.60	11.77
20	10.41	11.94	11.90	14.75	.....	11.57	17.15	13.12
27	10.38	12.06	11.42	11.64	12.00	11.24	13.82	12.36
Apr. 3	10.41	12.45	12.82	14.28	16.83	12.87	21.62	14.49
10	10.66	12.94	14.85	16.93	17.40	13.76	21.65	15.43
17	10.53	12.97	12.40	12.70	13.78	13.44	16.45	13.82
24	10.57	13.03	12.39	11.54	11.63	13.09	14.03	13.12
May 1	10.64	13.10	12.42	11.74	10.27	12.78	12.90	12.66
8	10.71	13.13	12.29	12.00	9.33	11.52	12.34	12.49
15	10.77	13.11	11.92	12.06	8.24	12.20	11.95	11.91
22	10.81	13.05	11.46	12.10	7.22	11.82	12.82	11.45
29	10.91	13.01	10.90	12.15	7.19	11.60	11.40	11.20
June 5	10.93	12.85	10.43	12.13	5.85	11.25	11.14	10.86
12	10.98	12.71	10.41	12.10	5.32	11.00	10.89	10.57
19	11.01	12.53	9.63	12.03	4.85	10.71	10.65	10.49
26	11.02	12.32	10.25	12.00	4.83	10.55	13.15	10.26
July 3	11.04	12.19	10.20	11.94	4.23	10.31	11.62	10.07
10	11.08	12.05	9.82	11.87	3.91	10.15	11.70	9.96
17	11.08	11.91	9.90	11.81	3.82	9.92	10.73	9.78
24	11.09	11.76	9.74	11.72	3.46	9.70	10.25	9.49
31	11.04	11.58	12.36	13.55	3.55	9.49	12.17	9.89
Aug. 7	11.06	11.47	9.71	11.89	3.33	9.43	10.75	9.42
12-14	11.06	11.47	10.12	13.10	3.18	9.54	10.54	9.79
21	11.05	11.43	9.65	11.95	3.11	9.41	9.81	9.46
28	11.04	11.36	9.26	11.71	2.94	9.22	11.38	9.29
Sept. 4	11.01	11.27	9.17	11.59	2.81	9.06	10.15	9.16
11	10.99	11.18	8.83	11.45	2.69	8.92	17.33	9.47
18	10.98	11.14	8.49	11.43	2.68	8.82	12.92	9.08
25	10.92	11.05	8.23	11.33	2.47	8.66	10.93	8.81
Oct. 2	10.90	10.99	8.95	11.22	2.85	8.56	16.34	9.09
9	10.89	11.07	8.48	16.49	3.91	8.57	24.22	10.83
16	11.34	11.31	9.27	12.38	5.95	8.84	24.86	10.61
23	10.80	11.57	9.32	12.21	7.52	9.12	16.95	10.56
30	10.74	11.68	10.22	11.52	7.15	9.14	13.20	10.21
Nov. 6	11.01	11.77	9.13	11.33	6.54	9.02	11.54	9.86
13	10.71	11.71	9.34	11.29	6.26	8.95	11.22	9.87
20	10.70	11.66	9.12	11.25	6.01	8.81	10.44	9.63
27	10.62	11.61	9.19	11.25	5.62	8.74	9.96	9.40
Dec. 4	10.57	11.54	9.14	11.21	5.31	8.59	9.57	9.30
11	10.62	11.58	12.27	11.28	6.68	8.63	23.62	10.78
18	10.50	11.72	10.77	13.33	8.41	9.00	19.57	11.39
24	10.49	11.86	10.12	11.82	9.64	9.20	19.12	11.07
31-								
Jan. 1	10.58	12.02	13.02	15.00	11.16	9.44	15.35	11.94

ELIZABETH CITY AREA

By Stanley W. Lohman

An investigation of the ground-water supply in the Elizabeth City area, Pasquotank County, N. C., was made during the winter of 1932-33 by the United States Geological Survey in cooperation with the North Carolina Department of Conservation and Development and with the Elizabeth City Public Utility Commission. The investigation was undertaken to determine the water-bearing properties of the shallow sands and especially the possibility of developing a ground-water supply that would be adequate to replace a surface-water supply from Knobbs Creek -- a supply that had become salty as a result of the drought of 1930-32. The ^{1/} results of this investigation have been published in preliminary form and later in final form, ^{2/} and the character of the water formerly supplied to the city has been described. ^{3/} As a result of this investigation, numerous shallow wells were put down over a wide area and pumped from a central pumping plant, and at present the city derives its entire water supply from this source. ^{4/}

During the course of the investigation information was obtained in regard to about 12 deep wells and more than 100 shallow wells. From one to about a dozen water-level measurements were made at 82 of the shallow wells from September 1932 through January 1933, ^{5/} and levels were run to 55 of the shallow wells to facilitate the construction of a water-table contour map. ^{6/} A 7-day automatic water-stage recorder was maintained intermittently on one shallow well from July 1933 to August 1934. ^{7/} All these shallow wells are in the Coastal Plain province and tap fine sand and sandy loam of the Pamlico formation of Pleistocene age.

^{1/} Lohman, S. W., Investigation of ground water in the Elizabeth City area, N. Car.: Am. Water Works Assoc. Jour., vol. 26, no. 2, pp. 201-216, Feb. 1934; North Carolina Section, Am. Water Works Assoc. and North Carolina Sewage Works Assoc. Proc., 1933, vol. 11, no. 1, pp. 12-33.

^{2/} Lohman, S. W., Geology and ground-water resources of the Elizabeth City area, N. Car.: U. S. Geol. Survey Water-Supply Paper 773-A, 57 pp., 4 pls., 5 figs., 1936.

^{3/} Luther, R. W., Unusual experiences with swamp water: North Carolina Section Am. Water Works Assoc. and North Carolina Sewage Works Assoc. Proc., 1933, vol. 11, no. 1, pp. 71-76.

^{4/} Parker, J. C., A review of Elizabeth City's struggle for an acceptable water supply: Am. Water Works Assoc. Jour., vol. 27, no. 4, pp. 448-453, April, 1935.

^{5/} Lohman, S. W., Geology and ground-water resources of the Elizabeth City area, N. Car.: U. S. Geol. Survey Water-Supply Paper 773-A, p. 55, 1936.

^{6/} Idem, pl. 1.

^{7/} Idem, pl. 4.

In June 1935 the Public Utility Commission, on the recommendation of the Geological Survey, put down a new observation well (city well 31T) near the municipal well field, and installed on this well a 7-day automatic water-stage recorder. Other wells in and near the well field are being observed periodically by the city, but the present report gives only the water levels for the well equipped with the recorder.

City well 31T is located 1,000 feet north of Jackson road, opposite the middle of the Jackson well field, and about 2,500 feet northwest of the city's pumping plant in the Ives well field, on property owned by J. M. Jackson. The well fields are 3 miles west of Elizabeth City. J. J. Stokes, a city employee, measures the depth to water level each week by the wetted tape method and changes the recorder chart. The well is 8 feet deep and 18 inches in diameter and is cased with tile. There are no pumped wells nearby, and the well is believed to be out of the range of influence of the municipal well fields. The measuring point is the edge of a hole in the instrument shelf, 1.5 feet above the land surface. The land in the vicinity of the well is flat, and the water table generally stands close to the surface, so close in fact that widely spaced drainage ditches are used to carry off excess water.

The water levels listed below are given in feet below the measuring point and were made by the wetted tape method unless otherwise indicated. For weeks in which the water level rose or declined at a nearly uniform rate, no intermediate water levels are given.

The water level fluctuations in this well are typical of a shallow water-table well in a humid region, in which conditions are favorable for recharge. The water table appears to have a well-defined upper limit at about 6 inches below the land surface, and during the brief period of record has not declined below a depth of 6 feet below the land surface. Thus the total range of fluctuation to the present is about $5\frac{1}{2}$ feet.

The water level generally rises abruptly as much as several feet almost immediately following heavy rains, provided the soil has not dried out completely. However, after prolonged dry spells when the water table has declined to 5 or 6 feet below the land surface and the soil has dried out, it may take considerable rain to first satisfy the deficiency of soil moisture before recharge can take place. This was demonstrated during October and November 1935. With only 0.35 inch of rain October was very dry, and the water level declined steadily to

7.35 feet below the measuring point on October 31. In November the precipitation was more than 4 inches above normal, and most of the rain fell on and before November 17, yet the water level did not rise until after November 17, and then it rose only 0.5 foot.

The precipitation at Elizabeth City in 1936 was 62.10 inches, which was 14.60 inches above normal. Precipitation was considerably above normal in each month, except in April, May, and August, which had slight deficiencies. As a result, high ground-water levels were maintained throughout most of the year, except for several declines of short duration during the summer.

Water levels in Elizabeth City well 31T, 1935-37,
in feet below measuring point

Date	Hour	Water level (feet)	Date	Hour	Water level (feet)
1935			1936		
June 27	2:45 p.m.	4.91	Jan. 6	8:00 p.m.	a 2.26
July 4	2:30 p.m.	6.14	7	2:00 a.m.	a 2.07
11	2:50 p.m.	6.47	8	11:00 p.m.	a 2.21
14	1:00 a.m.	a 6.56	9	2:25 p.m.	2.04
17	noon	a 2.43	15	8:00 p.m.	a 2.46
18	2:50 p.m.	2.98	16	2:35 p.m.	2.14
25	2:30 p.m.	4.94	19	3:00 p.m.	a 1.96
26	noon	a 5.01	23	2:40 p.m.	2.81
27	a.m.	a 2.1	30	2:50 p.m.	3.04
29	6:00 p.m.	a 2.62	Feb. 3	4:00 a.m.	a 3.29
30	2:00 a.m.	a 2.01	5	4:00 p.m.	a 2.09
Aug. 1	2:20 p.m.	2.40	6	p.m.	a 2.18
8	2:25 p.m.	3.99	17	3:45 p.m.	2.14
15	4:05 p.m.	5.50	20	noon	a 2.27
20	noon	a 6.16	24	3:45 p.m.	2.09
21	1:00 a.m.	a 5.71	Mar. 2	2:40 p.m.	2.40
22	12:30 p.m.	5.93	9	4:00 p.m.	a 3.08
29	2:05 p.m.	6.68	13	3:40 p.m.	2.12
Sept. 5	2:20 p.m.	6.89	16	2:50 p.m.	2.57
7	noon	a 3.63	17	4:00 p.m.	a 2.14
8	8:00 a.m.	a 3.76	20	2:00 p.m.	a 2.31
8	6:00 p.m.	a 3.16	21	4:00 a.m.	a 2.16
10	5:00 p.m.	a 3.71	23	3:30 p.m.	2.65
11	5:00 a.m.	a 3.60	28	8:00 a.m.	a 3.04
12	1:45 p.m.	3.78	29	2:00 a.m.	a 2.34
19	5:45 p.m.	5.44	30	2:20 p.m.	2.78
26	1:45 p.m.	6.40	31	9:00 p.m.	a 2.97
Oct. 3	1:40 p.m.	6.73	Apr. 2	10:00 p.m.	a 2.22
10	2:30 p.m.	6.98	5?		a 2.92
17	2:25 p.m.	7.14	6	2:25 p.m.	2.25
24	1:50 p.m.	7.24	7	6:00 p.m.	a 1.88
31	2:25 p.m.	7.35	13	2:25 p.m.	2.52
Nov. 7	2:05 p.m.	7.44	20	2:25 p.m.	3.65
14	1:35 p.m.	7.49	23	2:00 a.m.	a 3.90
17	2:00 p.m.	a 7.5	23	8:00 p.m.	a 3.79
21	1:40 p.m.	7.00	27	3:55 p.m.	4.13
28	2:30 p.m.	6.95	May 4	2:35 p.m.	4.76
Dec. 5	2:35 p.m.	6.80	11	3:15 p.m.	5.53
8	4:00 a.m.	a 6.89	18	3:50 p.m.	5.93
12	3:35 p.m.	6.40	25	4:00 p.m.	6.35
16	2:00 p.m.	a 5.50	June 1	3:15 p.m.	6.64
19	2:35 p.m.	5.68	4	6:00 p.m.	a 6.74
26	1:50 p.m.	6.26	5	4:00 p.m.	a 5.53
29	4:00 p.m.	a 6.72	8	2:05 p.m.	5.74
1936			13	4:00 p.m.	a 6.13
Jan. 2	1:45 p.m.	4.67	14	4:00 p.m.	a 3.45
3	6:00 p.m.	a 1.98	15	2:40 p.m.	3.64

a Taken from recorder chart.

Water levels in Elizabeth City well 31T,--Continued

Date	Hour	Water level (feet)	Date	Hour	Water level (feet)
1936			1936		
June 22	4:10 p.m.	4.96	Sept. 30	6:00 p.m.	a 4.55
29	2:45 p.m.	3.81	Oct. 2	11:00 p.m.	2.17
July 5	9:00 a.m.	a 4.92	5	5:00 p.m.	2.89
6	9:00 a.m.	4.67	9	noon	a 3.42
13	2:45 p.m.	5.84	10	6:00 p.m.	a 2.20
20	3:15 p.m.	6.07	12	3:45 p.m.	2.42
21	9:00 p.m.	a 6.17	16	noon	a 3.29
23	1:00 a.m.	a 4.27	17	noon	a 1.87
27	4:00 p.m.	5.34	19	3:15 p.m.	2.18
30	6:00 a.m.	a 5.90	26	2:15 p.m.	3.00
Aug. 1	10:00 a.m.	a 2.41	Nov. 2	4:15 p.m.	3.60
3	6:45 p.m.	3.39	6	noon	a 3.31
7	4:00 a.m.	a 4.15	7	noon	a 2.08
8	9:00 p.m.	a 2.19	9	3:45 p.m.	2.17
10	7:30 p.m.	2.48	12	6:00 p.m.	a 2.67
16	7:00 p.m.	a 4.04	13	8:00 p.m.	a 1.97
17	5:15 p.m.	3.49	16	3:50 p.m.	2.17
24	2:45 p.m.	4.25	21	11:45 a.m.	2.98
26	11:00 p.m.	a 4.71	26	1:00 p.m.	a 3.17
27	midnight	a 3.35	27	8:00 a.m.	a 2.37
Sept. 4	4:55 p.m.	6.00	28	10:45 a.m.	3.04
7	3:55 p.m.	6.37	Dec. 2	11:00 a.m.	a 3.36
14	5:15 p.m.	6.37	5	9:30 a.m.	2.15
18	5:00 a.m.	a 6.44	26	4:30 p.m.	2.32
19	4:00 p.m.	a 2.32	1937		
21	5:25 p.m.	3.00	Jan. 2	3:30 p.m.	2.13
28	3:30 p.m.	4.28			

a Taken from recorder chart.

NORTH DAKOTA

CITY OF HARVEY

By A. N. Sayre

The city of Harvey, N. Dak., obtains its water supply from two wells in the Sheyenne River Valley, 2.5 miles north of Harvey, in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 150 N., R. 72 W. The wells, which are 25 inches in diameter and 41 feet deep, penetrate 8 feet of silt and 33 feet of rather coarse sand and gravel.

Periodic measurements of water level in one of the city's wells have been made since 1927. The fluctuations in this well are apparently caused in part by pumpage but more largely by the periodicity of the recharge to the ground-water reservoir. During the winter, when the ground is frozen there is little or no recharge and pumping gradually lowers the water level. The frost generally leaves the ground in March and April, and during these months the moisture that was held in the ground when it was frozen, together with water from melting snow and precipitation moves down to the water table. This recharge in many years causes a very abrupt and large rise of the water level. Although a large part of the annual precipitation occurs during the summer, the water level in the Harvey well generally declines rather persistently throughout this season, partly because the pumpage is greatly increased and also because much of the precipitation that seeps into the ground in the summer is evaporated or is used by plants.

Water-level measurements in the Harvey well, furnished by A. N. Beiseker, city auditor of Harvey, are given in the following table.

Depths to water level below land surface in a municipal well at Harvey, North Dakota, in feet

Date	1927	1928	1929	1930	1931	1932	1933	1934
Jan. 1	...	7.5	6.4	12.8	11.3	12.0	7.0	14.3
Feb. 1	8.5	9.0	9.0	17.1	13.7	13.0	7.0	15.3
Mar. 1	8.7	10.3	11.8	17.1	10.0	14.0	9.0	12.0
Apr. 1	8.7	11.3	13.3	17.1	8.5	12.0	9.0	6.8
May 1	5.5	8.6	8.1	6.0	8.0	6.0	6.0	6.0
June 1	4.0	5.4	....	6.0	8.5	4.0	5.0	6.0
July 1	4.5	....	13.0	6.5	9.0	4.0	7.0	6.0
Aug. 1	4.6	....	9.6	6.5	9.3	5.0	9.0	9.8
Sept. 1	4.5	....	12.5	7.0	9.8	7.0	11.0	12.5
Oct. 1	5.1	....	14.4	7.8	10.0	7.0	13.0	13.5
Nov. 1	5.3	5.8	15.3	8.1	10.5	7.0	13.3	15.0
Dec. 1	5.3	5.8	15.1	9.0	11.3	7.0	13.7	15.8

Depths to water level below land surface in a municipal well at Harvey, North Dakota, in feet. (Continued)

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Jan. 1, 1935	16.5	Sept. 30, 1935	3.0	June 19, 1936	4.5
Feb. 1	17.7	Oct. 31	4.0	July 11	6.0
Mar. 1	18.1	Nov. 18	4.0	Aug. 1	7.5
Apr. 1	13.9	Dec. 30	5.0	Aug. 31	9.0
May 1	3.5	Jan. 31, 1936	5.0	Sept. 18	10.0
31	3.3	Feb. 18	5.5	Oct. 17	10.3
June 30	2.5	Mar. 18	5.5	Nov. 12	11.5
July 31	2.5	Apr. 18	2.5	Dec. 18	12.6
Aug. 31	2.0	May 20	3.0		

VILLAGE OF SHEYENNE

In connection with an investigation of ground-water supplies and dam sites of the James and Sheyenne River Basins in North and South Dakota in 1935, A. N. Sayre of the United States Geological Survey measured the depths to water level in 10 domestic wells in the village of Sheyenne, N. Dak. Sheyenne has no public waterworks, and its water supply is obtained from private domestic wells. The wells were visited in August, 1936 by L. K. Wenzel and V. C. Fishel, also of the United States Geological Survey, and measurements of depths to water level were made in 7 of the 10 wells in which measurements had been made in 1935. Descriptions of the wells and the measurements of the water level in them are given below:

1. L. S. Rude. Dug well, diameter 24 inches, depth 12 feet. Measuring point, top of well curb. Depth to water level Mar. 28, 1935, 11.70 feet; Aug. 12, 1936, 9.78 feet.

3. Stockyards. Dug well. Measuring point, top of well platform, 1.1 feet above land surface. Depth to water level Mar. 28, 1935, 10.52 feet; Aug. 12, 1936, 8.43 feet.

5. G. Olson. Dug well. Measuring point, top of concrete curb. Depth to water level Mar. 28, 1935, 15.69 feet; Aug. 12, 1936, 15.17 feet.

6. K. Egger. Measuring point, top of concrete casing. Depth to water level Mar. 28, 1935, 20.85 feet; Aug. 12, 1936, 19.00 feet.

7. E. Moe. Dug well. Measuring point, top edge of concrete easing, flush with land surface. Depth to water level Mar. 28, 1935, 22.25 feet; Aug. 12, 1936, 20.53 feet.

8. J. Larson. Dug well. Measuring point, base of pump, 2 feet above land surface. Depth to water level Mar. 28, 1935, 19.87 feet; Aug. 12, 1936, 18.93 feet.

9. C. Portz. Dug well in basement. Measuring point, top of curb. Depth to water level Mar. 28, 1935, 15.94 feet; Aug. 12, 1936, 14.56 feet.

OKLAHOMA

STILLWATER CREEK AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel and J. A. Allis

The observation well program in the Stillwater Creek area,^{1/} near Stillwater, Okla., was continued during 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service--G. W. Taylor, project manager. Weekly water-level measurements were made on 15 wells during the year except for a short period when measurements were temporarily discontinued in wells 13 and 17. The measurements were made by members of the Soil Conservation Service and the Geological Survey. A total of 757 measurements were made during 1936 and a water-stage recorder was operated on well 17. All water-level measurements that have been made since the beginning of the program are given in this report, including the monthly measurements that were given in Water-Supply Paper 777. The average water levels given in the tables are the averages of the water levels in all the wells except wells 5 and 16. The inclusion of the water levels in well 8 makes the average water levels given in this report somewhat different from those given in Water-Supply Paper 777 for the same period.

The water levels declined an average of about 2 feet from June 1 to August 31, 1934, as a result of subnormal precipitation. The 7.5 inches of rain that fell in September had little effect on the water levels, as most of the rainfall was required to supply soil moisture, the soil having been dried out during the dry summer months. The average water level on January 1, 1935, stood about 0.3 foot higher than on October 1 but was about 1 foot lower than on June 2.

Light rainfall in January and February 1935 caused only small changes in the water levels. Rainfall of about 3 inches in March caused the water levels to rise an average of about 0.5 foot. In response to rainfall of 2.00 inches in April, 3.59 inches in May, and 7.81 inches in June the water levels rose an average of about 1.3 feet by July 1 and reached the highest average stage for the period of record. In July the rainfall was less than half an inch, and the water levels declined sharply. Most of the rain that fell in August, September, October, and November was used to supply the demands of the vegetation and to furnish

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 140-142, 1936.

soil moisture, with the result that the water levels declined an average of 2.5 feet by December 2. During December the water levels rose an average of 0.26 foot, and at the close of 1935 the average water level stood almost a half foot lower than at the beginning of the year.

The water levels declined an average of 0.7 foot from January 1 to April 30, 1936, owing to light rainfall during this period. The 3.63 inches of rain that fell in May produced only small changes in the water levels. Light rainfall in June, July, and August resulted in an average decline of the water levels of about 0.8 foot between May 4 and September 7. The water levels rose an average of about 0.5 foot by November 2 as a result of moderate rains in September and October, but declined an average of about 0.4 foot during November and December. Thus the average water level on January 1, 1937, stood about 1.5 feet lower than on January 1, 1936, and about 2.0 feet lower than on January 1, 1935.

Wells in the Stillwater Creek area, in Payne County, Okla.

(The depth to the water level, given in the next to last column, is the depth below the measuring point on Jan. 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
1	Unknown oil company, SW $\frac{1}{4}$ sec. 15, T. 19 N., R. 4 E.	21.1	8	5.45	15.45
2	J. F. Gilchrist, NW $\frac{1}{4}$ sec. 36, T. 20 N., R. 3 E.	35.2	6	7.85	17.85
3	V. D. Hesser, NW $\frac{1}{4}$ sec. 23, T. 20 N., R. 3 E.	26.8	6	8.47	18.47
4	W. O. Snyder, NW $\frac{1}{4}$ sec. 2, T. 19 N., R. 3 E.	33.9	6	22.21	32.21
5	Jim Swartz, NE $\frac{1}{4}$ sec. 10, T. 19 N., R. 3 E.	32.0	8	19.02	a29.02
7	Charles Focht, NW $\frac{1}{4}$ sec. 20, T. 19 N., R. 3 E.	30.3	6	22.09	32.09
8	A. J. Burnidge, NW $\frac{1}{4}$ sec. 31, T. 20 N., R. 3 E.	66.3	6	42.70	52.70
9	Owner unknown, SW $\frac{1}{4}$ sec. 21, T. 20 N., R. 2 E.	40.8	6	23.47	33.47
11	May Jetterman, NW $\frac{1}{4}$ sec. 10, T. 19 N., R. 1 W.	31.1	8	26.16	36.16
12	Mrs. Martie Edwards, NE $\frac{1}{4}$ sec. 13, T. 19 N., R. 1 W.	44.7	6	33.79	43.79
13	Erma T. Pool, SW $\frac{1}{4}$ sec. 23, T. 19 N., R. 1 E.	47.0	7	26.64	36.64
14	E. C. Parks, NW $\frac{1}{4}$ sec. 35, T. 19 N., R. 2 E.	40.4	6	18.00	28.00
15	Lovell Brothers, NE $\frac{1}{4}$ sec. 35, T. 19 N., R. 3 E.	44.8	6	40.12	50.12
16	W. K. Hartman, SW $\frac{1}{4}$ sec. 12, T. 18 N., R. 3 E.	48.3	7	24.30	34.30
17	R. J. Haskett, NE $\frac{1}{4}$ sec. 12, T. 19 N., R. 1 E.	20.5	24	11.20	b21.20

a 28.77 feet since Aug. 14, 1936.

b 21.20 feet to Mar. 19, 1936; 21.22 from Mar. 19 to Oct. 30, 1936; 21.20 feet since Oct. 30.

Description of benchmarks

(The height of the benchmark is its height with reference to the arbitrary datum.)

Well no.	Height of benchmark (feet)	Location
1	13.80	Railroad spike in base of 15-inch catalpa tree, 36 feet W. of well.
2	15.44	Railroad spike in base of 15-inch elm tree along fence, 145 feet NW. of well.
3	16.07	Top of 1-inch iron rod, $1\frac{1}{2}$ inches above land surface, 5 feet N. of well.
4	28.36	Railroad spike in 20-inch elm tree, 3 feet above land surface, 150 feet NE. of well.
5	26.12	Railroad spike in 12-inch elm tree, 107 feet E. of well.
7	31.36	Railroad spike in base of 10-inch oak tree, $62\frac{1}{2}$ feet NW. of well.
8	50.45	Cross in NE. corner of concrete well platform.
9	30.21	Railroad spike in base of 8-inch cedar tree, 52 feet S. of well.
11	35.92	Top of 1-inch iron rod, 1 foot above land surface, 5 feet NW. of well.
12	39.91	Top of 1-inch iron rod, 1 inch above land surface, 3.8 feet N. of well.
13	41.99	Railroad spike in base of 12-inch oak tree, 77.6 feet N. of well.
14	27.19	$\frac{3}{8}$ -inch iron bolt in N. side of concrete well house.
15	45.93	Cross in SW. corner of base of pumped well, 95.3 feet SE. of well.
16	30.76	Cross in SW. corner of concrete well platform.
17	18.70	Railroad spike in base of 12-inch willow tree, 36.9 feet S. of well.

Water levels in wells in the Stillwater Creek area,
in Payne County, Okla., in feet above the arbitrary datum

Date	1	2	3	4	5	7	8	9
1934								
June 2	9.04	10.74	11.09	12.46	0.70	11.23	15.30	10.06
9	8.91	10.68	10.80	12.18	1.93	10.97	14.52	10.28
16	8.90	10.61	10.72	11.92	3.31	10.72	13.97	10.39
23	8.70	10.52	10.29	11.68	4.48	10.46	13.16	10.26
30	8.54	10.40	9.85	11.26	5.27	10.12	12.50	10.02
July 7	8.46	10.28	9.53	11.05	5.95	9.81	12.33	9.85
14	8.33	10.16	9.50	10.75	6.58	9.92	12.18	9.83
21	8.19	10.03	8.93	10.41	7.10	9.53	10.52	9.58
28	8.16	9.92	8.56	10.10	7.46	9.54	10.94	9.43
Aug. 4	8.01	9.81	8.20	9.83	7.79	9.10	10.85	9.34
11	7.94	9.71	7.92	9.61	7.01	9.08	10.72	9.29
18	7.87	9.60	7.63	9.39	8.18	8.90	10.58	9.19
26	7.89	9.53	7.55	9.20	8.37	8.81	10.26	9.22
31	7.87	9.51	7.68	9.13	8.44	8.95	10.36	9.29
Sept. 8	8.16	9.54	8.57	9.11	8.57	8.92	10.25	9.29
15	9.26	9.68	9.20	9.19	8.70	8.86	10.16	9.35
22	8.62	9.73	9.32	9.18	8.75	8.92	10.12	9.48
29	8.64	9.75	9.52	9.14	8.79	9.06	10.21	9.57
Oct. 6	8.65	9.72	9.42	9.09	8.79	8.87	10.16	9.56
13	8.68	9.68	9.42	9.00	8.79	8.93	10.12	9.70
20	9.70	9.65	9.24	8.95	8.81	8.96	10.17	9.82
27-28	8.97	9.57	8.80	8.91	8.80	8.47	9.94	9.64
Nov. 3	9.05	9.58	9.25	8.88	8.83	9.28	9.37	9.99
10	8.93	9.51	8.29	8.85	8.83	8.56	9.95	9.60
17	9.03	9.50	8.57	8.85	8.84	8.86	9.84	9.73
24	10.62	9.90	9.92	9.38	10.02	9.61	9.86	9.77
Dec. 1	10.31	9.76	10.42	9.56	10.03	9.34	10.03	9.89
8	9.89	9.84	10.15	9.69	10.02	9.56	9.80	9.82

Water levels in wells in the Stillwater Creek area,
in Payne County, Okla.--Continued

Date	1	2	3	4	5	7	8	9
1934								
Dec. 15	9.75	9.89	10.14	9.78	10.01	9.90	9.94	9.95
22	9.99	9.93	9.92	9.85	10.01	9.61	9.96	9.95
29	10.02	10.00	10.01	10.01	10.01	10.00	10.04	10.02
1935								
Jan. 5	9.96	10.01	9.97	9.98	9.99	9.99	9.90	9.89
12	10.15	10.05	10.07	10.04	3.24	10.02	9.82	9.97
19	10.17	10.09	9.94	10.10	.19	10.15	10.04	9.83
26	10.02	10.08	9.77	10.12	.30	10.25	9.95	9.67
Feb. 2	9.96	10.07	9.46	10.17	.40	9.97	9.77	9.45
9-10	10.08	10.09	9.53	10.22	.52	10.10	9.99	9.52
16	10.22	10.10	9.44	10.24	.52	10.03	9.97	9.33
23	10.32	10.12	9.76	10.31	.73	10.20	9.97	9.22
Mar. 2	10.33	10.14	9.87	10.34	.83	10.50	10.12	9.22
9	10.29	10.16	10.47	10.38	-.64	10.27	10.04	9.06
16	10.73	10.23	11.35	10.62	-.51	10.48	10.20	9.07
23-25	10.62	10.30	11.23	10.77	-1.38	10.46	10.09	8.97
30	10.86	10.42	12.05	11.28	-1.26	11.12	10.29	9.24
Apr. 6	10.69	10.47	11.84	11.45	-1.44	11.36	10.37	9.37
13	10.36	10.47	11.34	11.56	-1.35	11.00	10.12	9.24
20	10.56	10.48	11.31	11.68	-1.24	11.30	10.38	9.68
27	10.48	10.50	11.23	11.80	-1.14	11.24	10.38	9.47
May 4-7	10.55	10.51	11.34	11.92	-1.02	11.50	10.58	9.63
11	10.45	10.52	11.43	11.97	-.95	11.40	10.59	9.60
18-21	10.75	10.54	11.35	12.02	-.83	11.40	10.74	9.72
25-26	10.44	10.54	11.25	12.02	-.77	11.24	10.74	9.84
June 1	10.65	10.57	11.42	12.08	-.66	11.53	10.97	10.11
8	11.30	11.08	11.44	12.08	-.57	11.27	10.97	9.97
15	10.91	10.68	11.47	12.07	-.47	11.62	11.32	10.11
24	11.94	10.79	12.25	12.94	-.05	12.60	18.04	10.30
July 1	11.16	10.82	12.01	13.16	.06	12.93	18.43	10.46
8	10.78	10.85	11.75	12.16	.19	12.91	17.84	10.61
15	10.35	10.80	11.18	12.93	.35	12.56	16.61	10.57
22	10.11	10.69	10.78	12.64	.58	12.40	15.81	10.64
29	9.84	10.51	10.12	12.32	.85	11.90	14.31	10.49
Aug. 5	9.67	10.33	9.47	11.98	1.14	11.45	13.44	10.39
12	9.55	10.18	8.74	11.63	1.47	11.21	12.87	10.26
19	9.42	10.05	8.11	11.28	1.82	10.84	12.35	10.06
26	9.31	9.92	7.56	10.94	2.14	10.49	12.00	9.85
Sept. 3	9.83	9.82	7.35	10.68	2.52	10.31	11.78	9.82
9	9.46	9.77	7.22	10.53	2.77	10.24	11.58	9.72
16-17	9.34	9.74	7.08	10.37	3.02	10.03	11.40	9.62
23	9.30	9.70	6.71	10.18	3.23	9.78	11.11	9.54
30	9.31	9.66	6.79	10.01	3.42	9.76	11.13	9.54
Oct. 7	9.19	9.57	6.53	9.81	3.58	9.30	10.85	9.37
14-15	9.15	9.53	6.46	9.69	3.71	9.36	10.96	9.38
21	9.22	9.51	6.51	9.63	3.85	9.40	11.25	9.44
28	9.22	9.45	6.61	9.62	3.94	9.39	11.10	9.42
Nov. 4	9.21	9.43	6.62	9.62	4.05	9.28	10.99	9.44
12	9.13	9.39	6.43	9.64	4.14	8.95	10.63	9.30
18	9.21	9.38	6.78	9.68	4.19	9.21	10.78	9.51
25	9.07	9.35	6.24	9.65	4.24	8.98	10.55	9.31
Dec. 2	9.46	9.53	6.31	9.74	4.31	8.78	10.41	9.25
9	10.39	9.98	6.86	9.85	4.37	9.25	10.80	9.56
16	9.90	10.01	6.78	9.91	4.42	8.94	10.61	9.36
23	9.79	10.07	6.69	9.97	4.46	9.27	10.79	9.36
30	9.70	10.10	6.67	10.03	4.50	9.15	10.73	9.32
1936								
Jan. 6	9.78	10.10	6.45	10.07	4.54	9.17	10.84	9.29
13	9.77	10.09	6.52	10.13	4.58	9.09	10.72	9.29
20	9.65	10.08	6.30	10.15	4.60	8.87	10.52	8.95
27	9.51	10.04	5.92	10.17	4.62	8.73	10.31	8.71
Feb. 3	9.69	10.05	6.76	10.21	4.64	9.39	10.95	9.10
10	9.47	9.97	6.02	10.22	4.67	8.89	10.46	8.60
17	9.45	9.94	5.94	10.24	4.67	8.96	10.63	8.59
24	9.54	9.93	6.29	10.31	4.70	9.24	10.81	8.66
Mar. 2	9.52	9.91	6.00	10.31	4.72	8.98	10.56	8.38
9	9.57	9.91	6.05	10.35	4.71	9.00	10.56	8.24
16	9.58	9.91	5.85	10.37	4.71	9.03	10.54	8.14

Water levels in wells in the Stillwater Creek area,
in Payne County, Okla.--Continued

Date	1	2	3	4	5	7	8	9
1936								
Mar. 23	9.70	9.92	6.47	10.43	4.74	9.28	10.86	8.17
30	9.64	9.89	6.13	10.43	4.68	9.14	10.65	7.96
Apr. 6	9.51	9.85	5.82	10.45	4.68	8.93	10.35	7.69
13	9.54	9.84	6.25	10.51	4.67	9.08	10.47	7.63
20	9.54	9.82	6.29	10.53	4.67	9.08	10.42	7.49
27	9.50	9.80	6.32	10.54	4.67	9.05	10.46	7.39
May 4	9.45	9.76	6.13	10.49	4.64	9.05	10.30	7.27
11	9.46	9.74	6.25	10.41	4.22	9.09	10.36	7.26
18	8.75	9.67	6.25	10.31	4.61	9.18	10.39	7.15
25	9.28	9.71	6.33	10.14	4.60	9.06	10.30	7.07
June 1	9.28	9.73	6.82	10.01	4.57	9.33	10.60	7.09
8	9.08	9.69	6.74	9.81	4.56	9.20	10.42	7.08
15	8.92	9.67	6.68	9.63	4.55	9.09	10.30	7.00
22	8.81	9.64	6.51	9.43	4.52	9.02	10.30	7.08
29	8.64	9.62	6.63	9.24	4.50	8.92	10.32	7.12
July 6	8.64	9.52	6.23	9.09	4.50	8.87	10.14	7.16
13	8.58	9.47	6.25	8.93	4.47	8.47	10.03	7.16
20	8.50	9.28	6.23	8.79	4.48	8.44	10.11	7.23
27	8.43	9.35	6.19	8.69	4.47	8.43	10.07	7.23
Aug. 3	8.41	9.30	6.07	8.60	4.46	8.17	9.84	7.18
10	8.29	9.23	6.06	8.48	4.34	8.45	9.73	7.18
17	8.25	9.20	5.84	8.39	-1.63	7.91	9.69	7.26
24	8.23	9.14	5.89	8.30	-1.28	7.80	9.65	7.29
31	8.22	9.09	5.80	8.22	-1.55	7.56	9.51	7.31
Sept. 7	8.13	9.04	5.74	8.17	-1.49	7.61	9.52	7.42
14	8.10	9.01	5.80	8.11	-1.43	7.55	9.60	7.49
21	8.64	8.97	5.96	8.06	-1.36	7.63	9.54	7.49
28	10.97	9.00	6.19	7.97	-1.29	7.77	9.70	7.70
Oct. 5	8.90	8.95	6.62	8.08	-1.23	7.84	9.69	7.79
12	9.05	8.97	6.47	8.08	-1.16	7.78	9.57	7.94
19	9.02	9.00	6.60	8.06	-1.07	7.85	9.72	8.18
26	8.90	8.97	5.83	8.03	-1.04	7.69	9.54	8.20
Nov. 2	9.04	8.97	6.37	8.00	-1.15	7.96	9.94	8.64
9	8.94	8.94	5.96	7.98	-.91	7.88	9.52	8.41
16	8.89	8.91	5.75	7.95	-.84	7.94	9.48	8.24
23	8.92	8.91	5.69	7.92	-.77	7.93	9.68	8.21
30	8.91	9.02	5.73	7.91	-.70	7.67	9.63	8.18
Dec. 7	8.87	8.86	5.65	7.89	-.63	7.60	9.56	8.09
14	8.82	8.82	5.48	7.88	-.57	7.52	9.49	8.01
21	8.82	8.83	5.47	7.86	-.21	7.55	9.57	7.97
28	8.86	8.80	5.43	7.86	-.21	7.56	9.63	7.86
1937								
Jan. 4	8.91	8.85	5.63	7.87	-0.34	7.53	9.65	7.72

Date	11	12	13	14	15	16	17	Average
1934								
Oct. 13	10.10	9.81	10.19	10.62	10.06	9.80	.....	9.69
20	10.39	9.85	10.26	10.51	9.99	14.83	.....	9.79
27-28	10.16	9.66	9.55	9.91	9.37	10.22	.....	9.41
Nov. 3	10.56	9.98	10.68	10.65	10.28	9.87	.....	9.79
10	9.91	9.63	9.61	9.88	9.53	9.78	.....	9.35
17	9.89	9.70	10.00	10.33	10.00	9.77	.....	9.53
24	10.16	9.75	9.90	10.12	9.75	15.20	.....	9.89
Dec. 1	10.19	9.97	10.19	10.24	10.00	10.72	.....	9.99
8	9.62	9.90	9.83	10.03	9.93	10.13	.....	9.84
15	9.92	10.01	10.07	10.25	10.14	10.06	9.64	9.95
22	10.11	9.90	10.03	10.06	9.99	10.05	9.87	9.94
29	10.06	10.02	10.06	9.99	9.98	10.02	10.00	10.02
1935								
Jan. 5	9.74	9.91	9.84	10.03	10.05	9.97	10.01	9.94
12	10.08	10.01	10.16	10.07	10.09	12.13	10.07	10.05
19	10.09	9.97	9.90	9.90	10.01	9.97	10.09	10.02
26	9.54	9.86	9.68	9.83	9.94	9.83	10.08	9.91

Water levels in wells in the Stillwater Creek area,
in Payne County, Okla.--Continued

Date	11	12	13	14	15	16	17	Average
1935								
Feb. 2	9.27	9.72	9.39	9.75	9.83	9.78	10.08	9.76
9-10	9.69	9.83	9.61	9.70	9.90	9.75	10.17	9.88
16	9.99	9.77	9.46	9.65	9.76	9.80	10.19	9.86
23	9.68	9.76	9.56	9.86	9.86	9.68	10.23	9.91
Mar. 2	9.55	9.84	9.80	9.99	10.08	9.66	10.28	10.00
9	9.76	9.78	9.69	9.86	9.92	9.63	10.32	10.00
16	9.81	9.91	9.63	9.71	9.74	9.40	10.55	10.15
23-25	9.91	9.92	9.42	10.06	9.76	10.97	10.64	10.16
30	9.95	10.10	9.77	10.06	10.13	10.96	10.91	10.47
Apr. 6	10.13	10.18	9.73	10.28	10.17	9.87	11.02	10.54
13	9.77	10.05	9.18	10.06	9.73	9.79	11.03	10.30
20	10.10	10.22	9.46	10.33	10.06	15.77	11.11	10.51
27	10.16	10.21	9.41	10.34	9.94	10.22	11.11	10.49
May 4-7	10.08	10.12	9.11	10.53	10.04	15.44	11.17	10.54
11	10.19	10.24	9.54	10.58	10.11	10.78	11.27	10.61
18-21	10.20	10.26	9.83	10.48	9.97	15.00	11.36	10.66
25-26	9.97	10.20	9.28	10.58	9.78	10.76	11.52	10.57
June 1	10.24	10.33	9.69	10.77	10.12	11.11	11.51	10.75
8	10.18	10.31	9.40	10.67	9.93	16.45	11.62	10.78
15	10.43	10.41	9.73	11.01	10.15	11.00	11.50	10.88
24	10.58	10.88	9.52	10.95	10.09	14.84	11.99	11.76
July 1	10.77	11.22	9.53	11.08	10.12	13.70	11.72	11.80
8	10.88	11.25	9.64	11.24	10.28	11.10	11.13	11.64
15	10.84	10.96	9.56	11.20	10.17	10.85	10.62	11.41
22	10.95	10.76	9.80	11.58	10.32	10.89	10.25	11.27
29	10.87	10.48	9.62	11.24	10.12	10.91	9.84	10.89
Aug. 5	10.88	10.24	9.73	11.31	10.16	10.91	9.45	10.65
12	10.91	10.03	9.84	11.29	10.08	10.89	9.23	10.43
19	10.87	9.81	9.85	11.27	9.97	10.85	9.06	10.23
26	10.75	9.63	9.78	11.24	9.96	10.81	8.88	10.02
Sept. 3	10.79	9.58	9.80	11.20	9.88	15.92	9.25	10.00
9	10.86	9.59	9.77	11.10	9.86	11.55	9.36	9.93
16-17	10.90	9.55	9.85	11.08	9.88	10.74	8.79	9.82
23	11.07	9.46	9.73	10.93	9.72	10.68	8.61	9.68
30	11.08	9.42	9.86	11.01	9.86	10.65	8.50	9.68
Oct. 7	10.99	9.24	9.64	10.78	9.66	10.58	8.33	9.48
14-15	11.18	9.22	9.83	10.76	9.72	10.54	8.76	9.54
21	11.08	9.21	9.89	10.73	9.77	16.69	9.09	9.59
28	10.71	9.14	9.85	10.69	9.82	11.12	9.34	9.57
Nov. 4	10.81	9.12	9.81	10.37	9.71	10.47	9.53	9.54
12	10.64	9.03	9.50	10.20	9.43	10.37	9.65	9.38
18	10.38	9.14	9.94	10.61	9.93	10.37	9.73	9.56
25	10.11	9.01	9.46	10.02	9.41	10.29	9.76	9.30
Dec. 2	10.06	8.95	9.14	9.84	9.34	10.59	9.87	9.28
9	10.31	9.18	9.71	10.10	9.75	10.87	10.05	9.68
16	10.34	9.11	9.39	9.80	9.46	10.26	10.09	9.51
23	10.29	9.19	9.50	9.77	9.48	10.16	10.09	9.56
30	10.12	9.17	9.51	9.82	9.57	10.10	10.08	9.54
1936								
Jan. 6	10.46	9.20	9.50	9.60	9.40	10.07	10.11	9.54
13	10.20	9.11	9.44	9.72	9.56	10.02	10.09	9.52
20	10.01	8.99	9.17	9.45	9.38	9.97	10.10	9.36
27	9.67	8.85	8.77	10.09	9.06	9.88	10.06	9.22
Feb. 3	9.76	9.19	10.04	10.04	10.16	9.92	10.18	9.66
10	9.50	8.88	9.03	9.32	9.47	9.82	10.11	9.23
17	9.36	8.93	9.23	9.26	9.27	9.68	10.16	9.23
24	9.10	9.03	9.64	9.70	9.71	9.78	10.18	9.39
Mar. 2	8.89	8.86	9.20	9.39	9.45	9.70	10.18	9.20
9	8.67	8.83	9.22	9.40	9.40	9.68	9.24	9.11
16	8.39	8.81	9.10	9.22	9.34	9.64	9.40	9.05
23	8.10	8.94	9.70	9.81	9.83	9.66	10.37	9.35
30	7.78	8.84	9.37	9.46	9.38	9.62	10.38	9.16
Apr. 6	7.29	8.67	8.81	9.17	9.03	9.57	10.35	8.92
13	6.88	8.75	9.24	9.59	9.77	9.58	10.41	9.07
20	6.54	8.72	9.24	9.62	9.54	10.07	10.39	9.01
27	6.28	8.71	9.34	9.69	9.64	9.54	10.33	9.00

Water levels in wells in the Stillwater Creek area,
in Payne County, Okla.--Continued

Date	11	12	13	14	15	16	17	Average
1936								
May 4	6.08	8.56	9.05	9.44	9.31	10.13	10.18	8.85
11	5.99	8.54	9.10	9.53	9.39	12.45	10.17	8.87
18	5.87	8.47	9.14	9.55	9.81	9.84	10.09	8.82
25	5.81	8.40	9.10	9.57	9.40	9.71	10.28	8.80
June 1	5.86	8.51	9.71	10.12	9.99	9.76	10.22	9.02
8	5.85	8.49	9.31	9.74	9.50	9.76	10.42	8.87
15	5.75	8.28	9.14	9.63	9.40	9.73	9.14	8.66
22	5.74	8.27	9.21	9.71	9.39	9.70	9.70	8.67
29	5.72	8.24	9.14	9.86	9.58	9.69	9.35	8.64
July 6	5.82	8.11	9.00	9.50	9.08	9.63	9.15	8.46
13	5.83	8.06	....	9.64	9.26	9.63	8.96	8.39
20	5.99	8.09	....	9.81	9.23	9.60	8.81	8.38
27	6.15	8.04	....	9.82	9.23	9.60	8.66	8.36
Aug. 3	6.11	7.97	....	9.13	9.18	9.59	8.52	8.20
10	6.19	8.51	....	9.79	9.24	9.53	8.22	8.28
17	6.32	7.85	....	9.52	9.03	9.52	8.04	8.11
24	6.44	7.80	....	9.69	9.17	9.52	7.93	8.11
31	6.48	7.76	....	9.56	9.07	9.52	....	8.05
Sept. 7	6.56	7.73	....	9.53	8.84	9.49	....	8.03
14	6.68	7.72	....	9.54	8.82	9.47	....	8.04
21	6.50	7.69	....	9.50	8.20	9.50	....	8.02
28	6.68	7.74	....	9.45	9.09	9.57	....	8.39
Oct. 5	6.45	7.73	....	9.66	9.44	9.48	....	8.29
12	6.38	7.56	....	9.35	9.19	9.50	....	8.21
19	6.59	7.72	....	9.47	9.47	9.49	....	8.33
26	6.30	7.55	9.20	8.85	8.83	9.46	....	8.16
Nov. 2	6.64	7.87	9.62	9.58	9.78	9.48	9.09	8.57
9	6.11	7.69	9.03	9.01	9.29	9.43	9.22	8.30
16	6.03	7.61	8.80	8.76	9.16	9.42	9.29	8.22
23	5.97	7.71	9.03	8.95	9.25	9.39	9.31	8.25
30	5.91	7.71	9.04	8.91	9.49	9.36	9.33	8.26
Dec. 7	5.88	7.64	8.89	8.81	9.31	9.39	9.35	8.18
14	5.70	7.61	8.80	8.64	9.15	9.32	9.32	8.09
21	5.60	7.63	8.93	8.66	9.21	9.31	9.31	8.10
28	5.48	7.62	8.89	8.68	9.28	9.31	9.31	8.09
1937								
Jan. 4	5.42	7.65	9.12	8.80	9.46	9.27	9.30	8.15

OREGON

By Arthur M. Piper

In the autumn of 1935 a small beginning was made on a continuing program of water-level measurements in the semiarid eastern part of Oregon.^{1/} In 1936, this program has been continued through cooperation between the United States Geological Survey and the Oregon State Water Resources Department. Also, the scope of the program has been widened slightly by the construction of five wells in the Baker Valley and four wells in the Grande Ronde Valley to be used exclusively for measurements of ground-water levels. The construction of these nine wells was a project of the Works Progress Administration.

The program of water-level measurements in the Willamette Valley, western Oregon, by the United States Engineer Department ended September 30, 1936, after a term of one year. That program affords records of water-level changes in 114 wells; in 32 of those wells, the water level had been measured by the Geological Survey in 1928-30.

Two tables that follow show, respectively, the yearly range in water level for the Walla Walla Basin and the Willamette Valley--the two areas in which measurements have been taken periodically throughout the year--and the distribution of observation wells in the State together with the number of water-level measurements in 1936.

Changes in ground-water level, in feet, in two
basins in Oregon during 1936

	Walla Walla Basin (20 wells)	Willamette Valley (12 typical wells)
Range of water level, winter and spring of 1935-36		
Maximum rise	33.3	17.2
Minimum rise	1.68	6.32
Average rise	12.2	11.4
Change in water level from Oct. 1, 1935 to Sept. 30, 1936		
Maximum rise	1.54	1.37
Maximum fall	6.87	.07
Average rise (+) or fall (-)	-1.11	+ .46
Change in water level from Jan. 1 to Dec. 31, 1936		
Maximum rise	5.29	....
Maximum fall	5.91	....
Average rise (+) or fall (-)	+ .25	....

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 143-160, 1936.

Distribution of observation wells and measurements of
ground-water level in Oregon, in 1936

(Except as indicated by footnotes, in cooperation between the United States Geological Survey and the Oregon State Water Resources Department)

Locality	Depth of wells (feet)	Number of wells	Number of measurements
Baker Valley, Baker County Permanent observation wells	8½-11½	5	9
Fort Rock Valley, Lake County Privately-owned wells	100-260	4	6
Grande Ronde Valley, Union County Permanent observation wells	11-29	4	12
Harney Basin, Harney County Permanent observation wells	12½-48	7	28
Privately-owned wells ^{1/}	10½-288	24	43
Walla Walla Basin, Umatilla County Privately-owned wells equipped with float gages ^{2/}	42½-54	3	364
Privately-owned wells not equipped with float gages ^{3/}	11-46	18	256
Willamette Valley ^{4/} Privately-owned wells, records included in this report	18-62	12	489
Privately-owned wells, records omitted from this report	8-252	102	3,759

^{1/} Only 11 observation wells in common to 1935 and 1936.

^{2/} Observations once or twice a week by owner serving as voluntary observer without pay.

^{3/} Water-level measurements once or twice a month by district water-master.

^{4/} Water-level measurements by United States Engineer Department.

The basic data on ground-water levels in 1936 follow, together with correlative data on ground-water pumpage in the Harney Valley.

Baker Valley

7S/39-20n1. Permanent observation well, SW¼SW¼ sec. 20, T. 7 S., R. 39 E., about 3.2 miles by road northwest of the post office at Haines, Oregon, about 28 feet south and 35 feet east of the south 1/16 corner between secs. 19 and 20 in the southeast angle of Anthony Lake Road and county road east, 2 feet north of right-of-way fence. Constructed in June 1936, 18 inches square and 9 feet deep. Wood curb to bottom, perforated 12-inch steel casing 3.3 to 7.3 feet. Measuring point, top of wood curb, copper nail with washer, 1.0 foot above land surface, altitude about 3,374.8 feet. Water levels, in feet above sea level, June 12, 3,371.78; Sept. 11, below 3,366.5 (well dry).

8S/39-22f1. Permanent observation well, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 8 S., R. 39 E., about 8.6 miles by road (via Wingville), northwest of the post office at Baker, Oregon, about 48 feet north and 28 feet west of the center of sec. 22, along the west side of county road, 2 feet east of right-of-way fence. Constructed in June 1936, 18 inches square and 11 feet deep. Wood curb to 9 feet, perforated 12-inch steel casing, 6.6 to 10.6 feet. Measuring point, top of wood curb, copper nail with washer, 0.5 foot above land surface, altitude 3,386.28 feet. Reference benchmark, about 55 feet north of well and across road, in base on south side of power-pole stub; copper nail with washer, 0.29 foot above measuring point; altitude 3,386.57 feet. Water levels, in feet above sea level, June 12, 3,379.38; Sept. 11, 3,377.81

8S/40-19d1. Permanent observation well, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 8 S., R. 40 E., about 8.7 miles by road north of the post office at Baker, Oregon, about 18 feet south and 220 feet east of the northwest corner of sec. 19, along the south side of county road (Garren Lane), 2 feet north of right-of-way fence. Constructed in June 1936, 18 inches square and 9 feet deep. Wood curb to bottom, perforated 12-inch steel casing 2.5 to 6.5 feet. Measuring point, top of wood curb, copper nail with washer, altitude 3,342.45 feet. Reference benchmark, about 38 feet north and 5 feet east of well, across road, in base on south side of fence post; a copper nail with washer, 0.23 foot above measuring point; altitude 3,342.68 feet. Water levels, in feet above sea level, June 13, 3,339.26; Sept. 11, 3,336.35.

8S/40-23a1. Permanent observation well, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 8 S., R. 40 E., about 8.9 miles by road northeast of the post office at Baker, Oregon, about 28 feet south and 35 feet west of the northeast corner of sec. 23, along the south side of the Medical Springs Road in the southwest angle of T-road south, 2 feet north of right-of-way fence. Constructed in June 1936, 18 inches square and 9 feet deep. Wood curb to bottom, perforated 12-inch steel casing, 5.5 to 9.5 feet. Measuring point, top of wood curb, copper nail with washer, 1.5 foot above land surface, altitude 3,348.74 feet. Reference benchmark, about 65 feet east of well, in southeast angle of T-road south, in top of concrete monument; United States Coast and Geodetic Survey tablet which is not stamped, altitude 3,347.652 feet. Water levels, in feet above sea level, June 13, 3,342.70; Sept. 10, 3,341.37.

9S/40-8n1. Permanent observation well, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 9 S., R. 40 E., about 2.2 miles by road northwest of the post office at Baker, Oregon, and within the corporate limits, about 300 feet south from the south $\frac{1}{16}$ corner between secs. 7 and 8, 45 feet east of the center line of 17th (Chico) Street and 18 feet north of the center line of K Street, 2 feet south of right-of-way fence of K Street. Constructed in June 1936, 18 inches square and 10 feet deep. Wood curb to bottom. Perforated 12-inch steel casing 6 to 10 feet. Measuring point, top of wood curb, copper nail with washer, 0.5 foot above land surface, altitude 3,413.24 feet. Water levels, in feet above sea level, June 13, 3,405.72; Sept. 10, below 3,403.4 (well dry).

Fort Rock Valley

12N-15e1. Harry Crampton. Measuring point, top of 16-inch casing in pit, about 41.2 feet below land surface. Water level Sept. 2, 1936, 8.26 feet above arbitrary datum. Datum assumed 10 feet below water level on Sept. 4, 1932.

13N-22b1. H. W. Ostrom. Measuring point, top of pump-base flange, at drilled hole, 0.3 foot above land surface. Water level Sept. 2, 1932, 8.25 feet above arbitrary datum. Datum assumed 10 feet below water level on Sept. 4, 1932.

14N-4g1. H. M. Parks. Measuring point, top of pump-base flange, at drilled hole, 0.5 foot below land surface. Water level above arbitrary datum June 20, 1936, 8.33 feet; June 20, 1936, 6.03 feet (after 8 $\frac{1}{2}$ hours of pumping); Sept. 2, 1936, 8.48 feet. Datum assumed 10 feet below water level on Sept. 4, 1932.

14N-4g2. H. M. Parks. Measuring point, top of 8-inch casing, 0.7 foot above land surface and about level with measuring point on well 14N-4g1. Water level Sept. 2, 1936, 8.48 feet above arbitrary datum. Datum assumed 10 feet below water level on Sept. 4, 1932.

Grande Ronde Valley

1S/39-17k1. Permanent observation well, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 1 S., R. 39 E., about 14.8 miles by road northeast of the post office at La Grande, Oregon, 1.2 miles north of Imbler, about 1,980 feet north and 28 feet east of the south $\frac{1}{4}$ corner sec. 17, along the east side of county road (Pumpkin Ridge), 2 feet west of right-of-way fence. Constructed in April 1936,

18 inches square and initially 29 feet deep. Wood curb to 23 feet, perforated 12-inch steel casing 21 to 29 feet; on May 15, 1936 measured depth, 18.9 feet owing to influx of fine sand. Measuring point, top of wood curb, copper nail with washer, 0.5 foot above land surface, altitude 2,734.74 feet. Water levels, in feet above sea level, May 15, 2,717.26; June 16, 2,716.17; Sept. 10, below 2,716.2 (well dry).

2S/39-26f1. Permanent observation well, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 26, T. 2 S., R. 39 E., about 10.4 miles by road east of the post office at La Grande, Oregon, about 300 feet north and 18 feet east of the center of sec. 26, along the west side of county road, 2 feet east of right-of-way fence. Constructed in May 1936, 18 inches square and 21 feet deep. Wood curb to 13 feet, perforated 12-inch steel casing 12 to 20 feet. Measuring point, top of wood curb, copper nail with washer, 1.0 foot above land surface, altitude about 2,695 feet. Reference bench mark, about 300 feet south of well, in northwest angle of T-road north, in base on east side of angle post of fence; copper nail with washer, 1.90 feet above measuring point. Water levels, in feet above sea level, May 15, 2,678.1; June 19, 2,678.13; Sept. 10, 2,677.82.

3S/38-10b1. Permanent observation well, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 3 S., R. 38 E., about 2.9 miles by road east of the post office at La Grande, Oregon, about 28 feet south and 1,202 feet east of the north $\frac{1}{4}$ corner sec. 10, along the south side of county road (Cove Avenue), 2 feet north of right-of-way fence. Constructed in April 1936, 18 inches square and 10 feet deep. Wood curb, perforated 12-inch steel casing 5.5 to 9.5 feet. Measuring point, top of wood curb, copper nail with washer, 1.5 feet above land surface, altitude 2,729.38 feet. Reference bench mark, about 190 feet west of well and across road, in base on east side of power pole; copper nail with washer, 0.75 foot below measuring point; altitude 2,728.63 feet. Water levels, in feet above sea level, May 15, 2,721.30; June 18, 2,721.38; Sept. 10, 2,720.92.

3S/38-25b1. Permanent observation well, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T. 3 S., R. 38 E., about 4.3 miles by road northwest of Hot Lake and 5.8 miles south-east of the post office at La Grande, Oregon, about 28 feet south and 61 feet east of the north $\frac{1}{4}$ corner of sec. 25, along the south side of county road, 1 foot north of right-of-way fence. Constructed in May 1936, 18 inches square and 13 feet deep. Wood curb to 10 $\frac{1}{2}$ feet, perforated 12-inch steel casing 9 to 13 feet. Measuring point, top of wood curb, copper nail with washer, 1.5 feet above land surface, altitude 2,708.33

feet. Reference bench mark, about 125 feet northeast of well and across road, in root on southwest side of lone 18-inch poplar tree; copper nail with washer, 2.40 feet below measuring point; altitude 2,705.93 feet. Water levels, in feet above sea level, May 15, 2,697.17; June 16, 2,697.16; Sept. 10, 2,695.77.

Harney Valley

(Wells not completely described below are described in Water-Supply Paper 777, pages 151-153)

9N-34n1. Frank Whiting, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 22 S., R. 31 E. Stock drilled well, diameter 18 inches, depth 288 feet. Measuring point (2), top of 2-inch plank well cover at bored hole 0.7 foot south of pump, about 1 foot above land surface and about 4,154.17 feet above mean sea level. Altitude of water level: Jan. 20, 1936, 4,144.2; Apr. 21, 1936, 4,151.7; Sept. 3, 1936, 4,145.62.

9P-25j1. Alex Rogers, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 22 S., R. 32 E. Domestic and stock dug well, no casing, diameter 5 $\frac{1}{2}$ feet, depth 10 $\frac{1}{2}$ feet. Measuring point (2), top of 3- by 8-inch stringer of new well deck, below trap, marked by aluminum tag; 0.5 foot above land surface and about 4,146.70 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,138.06.

9P-36h1. Frank Triska. Measuring point (2), top of concrete well platform, south of pump, level with yard around dwelling which is about 1 foot above natural land surface and about 4,133.57 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,123.44.

9Q-36c1. State of Oregon (formerly I. L. Poujade). Replaced by 9Q-36c2.

9Q-36c2. State of Oregon (formerly I. L. Poujade), NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 22 S., R. 32 $\frac{1}{2}$ E. Domestic bored well, 6-inch stovepipe casing, diameter 6 inches, depth 13.9 feet. Measuring point (1), top of 6-inch casing, 1.6 feet above land surface and about 4,144.7 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,130.71.

10L-12j1. City of Burns, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 23 S., R. 30 E., in the northwest angle of North Grand Avenue and West D Street (extended). Southerly of two municipal wells, drilled 12 inches in diameter and 251 feet deep; 12-inch steel casings to 151 feet; deep-well turbine and 25-horsepower direct-connected electric motor. Reference bench mark, in concrete floor of pump house at west side of south entrance, a chiseled

cross, altitude 4,229.18 feet. Measuring point (2), top of pump-base flange, north side, about 0.5 foot above land surface and about 4,229.2 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,142.58.

10N-3d2. Permanent observation well, lot 4, sec. 3, T. 23 S., R. 31 E. Reference bench mark, 0.5 mile west of well, on the south side of the Burns-Drewsey road, in the northeast corner of the Poison Creek School yard; a United States Geological Survey standard cap, stamped "4146 H 1903" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe; altitude 4,154.61 feet. Measuring point (1), top of wood curb, a copper nail with washer, 1.0 foot above land surface and about 4,154.12 feet above mean sea level. Altitude of water level: Jan. 15, 1936, 4,143.82; Feb. 18, 1936, 4,143.80; Apr. 21, 1936, 4,147.24; Sept. 3, 1936, 4,144.26.

10N-5c1. Estate of William Hanley. Measuring point (1), top of plank well cover, copper nail with washer, 2.0 feet above land surface and about 4,162 feet above mean sea level. Altitude of water level: Apr. 22, 1936, 4,152.9.

10N-7d1. Hansen. Water level was not measured in 1936.

10N-9n1. Burns Airport. Measuring point (1), top of casing, 0.3 foot above land surface and 4,150.19 feet above mean sea level. Altitude of water level: Apr. 21, 1936, 4,140.99.

10N-13c2. J. S. Cook, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 23 S., R. 31 E. Domestic and stock drilled well, initially 445 feet deep, 6-inch standard steel casing to 179 feet; deepened in June 1936 to 501 feet. Measuring point (1), top of casing, 0.5 foot above land surface and about 4,140 feet above mean sea level. Altitude of water level: July 1, 1936, 4,135.5 (based on approximate measurement by owner); Sept. 9, 1936, 4,134.84.

10N-13e1. J. S. Cook, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 23 S., R. 31 E. Irrigation drilled well, initially 18 inches in diameter and 105 feet deep, stovepipe casing 1 to 84 feet; in 1934-35, redrilled to 330 feet, 12-inch standard steel casing to 200 feet, perforated near bottom. The well shows levels for two distinct bodies of ground water: (1) between the inner and outer casings, for water in deep pervious beds in the valley fill; (2) within the inner casing, for water in the bedrock. Measuring point (2), top of 18-inch casing, 1.0 foot below land surface (for measurements between 18-inch and 12-inch casings) and 4,141.75 feet above mean sea level. Altitude of water level: Sept. 9, 1936, 4,128.95. Measuring point (4), top

of 12-inch inner casing, 0.3 foot above land surface (for measurements within 12-inch casing) and 4,143.04 feet above mean sea level. Altitude of water level: Sept. 9, 1936, 4,126.36.

10N-14a3. Permanent observation well, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 23 S., R. 31 E. Reference bench mark, about 90 feet west of well, in base on south side of power pole; copper nail with washer, 0.55 foot above measuring point; altitude 4,143.60 feet. Measuring point (1), top of wood curb, copper nail with washer, 0.5 foot above land surface and 4,143.05 feet above mean sea level. Altitude of water level: Jan. 15, 1936, 4,129.35; Feb. 18, 1936, 4,129.55; Apr. 21, 1936, 4,131.26; Sept. 9, 1936, 4,130.57.

10N-15b3. William McLaren. Measuring point (2), bottom of $\frac{1}{2}$ -inch drilled hole in casing, west side and 4,141.92 feet above mean sea level. Altitude of water level: Apr. 22, 1936, 4,139.7.

10N-16e1. Permanent observation well, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T. 23 S., R. 31 E. Reference bench mark, about 80 feet due north of well, in base on east side of power pole; copper nail with washer, 0.55 foot above measuring point; altitude 4,147.85 feet. Measuring point (1), top of wood curb, copper nail with washer, 1.0 foot above land surface and 4,147.30 feet above mean sea level. Altitude of water level: Jan. 15, 1936, 4,137.20; Feb. 18, 1936, 4,137.30; Apr. 21, 1936, 4,141.38; Sept. 9, 1936, 4,138.42.

10N-17c1. (Bored by U. S. Geological Survey). Measuring point (2), top of stovepipe casing, 0.8 foot above land surface and 4,147.26 feet above mean sea level. Water level was not measured in 1936.

10N-28d1. Charles Culp, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 23 S., R. 31 E. Drilled well, 8 inches in diameter and 45 feet deep, standard steel casing to unknown depth. Measuring point (1), top of casing, 1.7 feet above land surface and 4,139.20 feet above mean sea level. Altitude of water level: Apr. 22, 1936, 4,135.60.

10N-33e1. Permanent observation well, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33, T. 23 S., R. 31 E. Reference bench mark, about 95 feet south of well, in base on east side of power pole; copper nail with washer, 0.94 foot below measuring point; altitude 4,134.08 feet. Measuring point (1), top of wood curb, a copper nail with washer, 1.0 foot above land surface and 4,135.02 feet above mean sea level. Altitude of water level: Jan. 15, 1936, 4,125.92; Apr. 21, 1936, 4,126.50; Sept. 9, 1936, 4,126.96.

10P-7L1. Harney Branch Experiment Station, NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 23 S., R. 32 E. Observation bored well. Reference bench mark same as for well 10P-7L2. Measuring point (2), top of stovepipe casing, 0.2 foot above

land surface and 4,135.64 feet above mean sea level. Provisional altitude shown in Water-Supply Paper 777 corrected. Altitude of water level: Apr. 4, 1936, 4,128.1; Apr. 20, 1936, 4,128.27; May 4, 1936, 4,128.1; June 8, 1936, 4,128.9; July 11, 1936, 4,130.1; Aug. 4, 1936, 4,131.3; Aug. 31, 1936, 4,129.9; Sept. 3, 1936, 4,129.63 (Measurements by Obil Shattuck and R. E. Hutchison).

10P-7L2. Harney Branch Experiment Station, $NR\frac{1}{4}SW\frac{1}{4}$ sec. 7, T. 23 S., R. 32 E. Irrigation bored well, 18 inches in diameter. Reference bench mark, in concrete floor of pump house about 1 foot south of well, a bronze tablet set by Oregon State Highway Department, altitude 4,135.28 feet. Measuring point (1), top of 18-inch casing, 0.5 foot below land surface and 4,134.88 feet above mean sea level. Altitude of water level: Apr. 4, 1936, 4,126.7; Apr. 20, 1936, 4,127.1 (Measurements by Obil Shattuck and R. E. Hutchison).

10P-7q1. Harney Branch Experiment Station. Measuring point (4), center of pneumatic gage (reset), 2.0 feet above land surface and 4,136.87 feet above mean sea level. Provisional altitude shown in Water-Supply Paper 777 corrected. Altitude of water level: May 4, 1936, 4,129.4; Sept. 3, 1936, 4,119.35 (Measurements by Obil Shattuck and R. E. Hutchison) (Water-level measurements in Water-Supply Paper 777 are unreliable).

10P-7q3. Harney Branch Experiment Station, $SW\frac{1}{4}SE\frac{1}{4}$ sec. 7, T. 23 S., R. 32 E. Observation bored well, 4 inches in diameter and 12.8 feet deep, stovepipe casing to depth $\frac{1}{2}$ foot. Reference bench mark, about 60 feet due north of well, about 2 feet from southwest corner of pump house, concrete monument; top of 2-inch pipe cap; altitude, 4,138.54 feet. Water levels, in feet above a datum which is 4,000 feet above mean sea level, in 1935: Feb. 7, 125.2; March 1, 125.2; Apr. 3, 125.3; May 5, 125.2; June 6, 125.5; July 5, 125.7; Aug. 3, 125.8; Oct. 2, 125.4; Nov. 4, 125.3; Nov. 27, 124.3; Dec. 16, 124.3; Dec. 28, 125.1. (Levels based on measurements by R. E. Hutchison). Measuring point (1), top of 4-inch casing, level with land surface and 4,137.21 feet above mean sea level. Altitude of water level: Apr. 4, 1936, 4,125.3; May 4, 1936, 4,125.6; June 8, 1936, 4,126.1; July 11, 1936, 4,126.4; Aug. 4, 1936, 4,126.6; Aug. 31, 1936, 4,126.46; Sept. 3, 1936, 4,126.52. (Water-level measurements by Obil Shattuck and R. E. Hutchison).

10P-20n1. R. W. Cozad, $SW\frac{1}{4}SW\frac{1}{4}$ sec. 20, T. 23 S., R. 32 E. Garden irrigation dug well, $15\frac{1}{2}$ feet deep, cribbed with 2-inch plank. Measuring point (1), top of plank well cover at northeast corner, copper nail with

washer, 0.5 foot above land surface and 4,132.60 feet above mean sea level. Altitude of water level: Apr. 23, 1936, 4,111.60.

10P-30r1. Permanent observation well, $SE\frac{1}{4}SE\frac{1}{4}$ sec. 30, T. 23 S., R. 32 E. Reference bench mark, 10 feet south and 3 feet east of well, in northwest angle of Burns-Crane highway and county road south, 2 feet west of highway fence, in concrete monument; United States Coast and Geodetic Survey tablet stamped "G 19 1920", 0.63 foot above measuring point; altitude, 4,131.760 feet. Measuring point (1), top of wood curb, a copper nail with washer, 1.5 feet above land surface and 4,132.27 feet above mean sea level. Altitude of water level: Jan. 29, 1936, 4,117.27; Apr. 20, 1936, 4,117.90; Sept. 8, 1936, 4,117.43.

11N-28e1. Permanent observation well, $SW\frac{1}{4}NW\frac{1}{4}$ sec. 28, T. 24 S., R. 31 E. Reference bench mark, about 45 feet north and 12 feet west of well, in base on east side of power pole; a copper nail with washer, 0.31 foot below measuring point; altitude 4,125.63 feet. Measuring point (1), top of wood curb, a copper nail with washer, 1.5 feet above land surface and 4,125.94 feet above mean sea level. Altitude of water level: Jan. 15, 1936, 4,111.94; Apr. 22, 1936, 4,111.56; Sept. 8, 1936, 4,111.38.

11P-24r1. Permanent observation well, $SE\frac{1}{4}SE\frac{1}{4}$ sec. 24, T. 24 S., R. 32 E. Reference bench mark, about 160 feet southeast of well, in the southwest angle of the Burns-Crane highway and county road south, 3 feet west of highway fence, in top of concrete monument; United States Coast and Geodetic Survey tablet stamped "J 19 1920", 0.84 foot below measuring point; altitude 4,110.267 feet. Measuring point (1), top of wood curb, a copper nail with washer, 1.0 foot above land surface and 4,111.11 feet above mean sea level. Altitude of water level: Jan. 29, 1936, 4,066.61; Feb. 18, 1936, 4,066.91; Apr. 20, 1936, 4,066.74; Sept. 8, 1936, 4,064.38.

11Q-32e2. Starr Buckland, $SW\frac{1}{4}NW\frac{1}{4}$ sec. 32, T. 24 S., R. 32 $\frac{1}{2}$ E. Domestic drilled well, diameter 12 inches, depth 41 feet, standard steel casing of unknown depth. Water level on December 26, 1935, 4,074.2 feet above sea level. Measuring point (1), top of 12-inch casing, 0.2 foot above land surface and about 4,105.2 feet above mean sea level. Altitude of water level: Jan. 20, 1936, 4,074.2; Apr. 20, 1936, 4,080.5.

11R-30m1. C. M. Spencer, $NW\frac{1}{4}SW\frac{1}{4}$ sec. 30, T. 24 S., R. 33 E. Unused drilled well, diameter 12 inches, depth 106 feet, stovepipe casing to 40 feet. Measuring point (2), top of 12-inch stovepipe casing at seam, 1.0 foot above land surface and about 4,110.85 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,091.97.

11R-30m2. C. M. Spencer. Measuring point (1), top of wood curb, 0.7 foot above land surface and about 4,109.0 feet above mean sea level. Altitude of water level: Sept. 8, 1936 (well dry).

12N-9p1. E. N. Nelson. Measuring point (1), top of casing, 1.1 feet above land surface and about 4,124 feet above mean sea level. Altitude of water level: Apr. 17, 1936, 4,110.6.

12N-28r1. Unknown. Water level was not measured in 1936.

12N-30j1. Frank Klitzke. Measuring point (1), top of casing, 1.0 foot above land surface and about 4,186 feet above mean sea level. Altitude of water level: Apr. 17, 1936, 4,131.3.

12P-2a1. Pacific Livestock Company, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 25 S., R. 32 E. Stock drilled well, diameter 6 inches, depth 43 feet, cased to unknown depth. About 225 feet north of well 12P-2a2. Measuring point (1), top of 6-inch casing, 0.2 foot above land surface and 4,103.35 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,088.37.

12P-2a2. Pacific Livestock Company, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 25 S., R. 32 E. Stock dug well, 8 feet square and 13 feet deep, 2-inch plank curbing. Measuring point (1), top of 2- by 12-inch plank well curb, center of north side, copper nail with washer, 2.8 feet above land surface and 4,105.10 feet above mean sea level. Altitude of water level: Apr. 22, 1936, 4,096.63; Sept. 8, 1936 (well dry; water level below altitude 4,090.6 feet).

12Q-1p1. C. M. Spencer. Water level was not measured in 1936.

12Q-5c1. Fred Timm, lot 3, sec. 5, T. 25 S., R. 32 $\frac{1}{2}$ E. Domestic drilled well, diameter 4 inches, measured depth 66 $\frac{1}{2}$ feet, although drilled to 185 feet, no casing. Measuring point (2) base of pump, 1.3 feet above land surface, altitude about 4,106.6 feet. Water level on December 27, 1935, 4,085.2 feet above sea level. Water level was not measured in 1936.

12Q-5c2. Fred Timm. Water level was not measured in 1936.

12R-12j1. Unknown, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 25 S., R. 33 E. Unused drilled well, diameter 6 inches, depth 54 feet, standard well casing to unknown depth. Measuring point (1), top of 6-inch casing, 2.9 feet above land surface and about 4,120.9 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,101.08.

12R-23d1. Unknown. Measuring point (1), top of casing, 2.0 feet above land surface and about 4,110 feet above mean sea level. Altitude of water level: Sept. 8, 1936, 4,082.14.

13N-15a1. (Bored by U. S. Geological Survey). Water level not measured in 1936.

Approximate monthly pumpage, in acre-feet, from wells equipped with electric pumps in the Harney Valley

10L-12j1 and 12j2. City of Burns. Two municipal wells each 12 inches in diameter and 251 feet deep, cased to 151 feet with standard screw-joint casing; deep-well turbines driven by 25-horsepower direct-connected electric motors. Pressure and draft are equalized by 100,000-gallon elevated tank. No. 12j1 is the northerly of the two wells. The two pumping plants can be operated independently or simultaneously; ordinarily they are controlled by automatic switches so as to maintain the water level in the elevated tank. Water from the Danforth formation.

Monthly pumpage, in acre-feet

Month	1933	1934	1935	1936
January	16.9	14.5	15.4	12.5
February	15.4	16.3	15.6	12.5
March	13.7	18.0	15.3	14.9
April	27.8	27.4	13.8	17.1
May	35.6	32.2	20.9	19.9
June	33.8	46.3	26.2	22.1
July	42.7	58.6	24.1	29.7
August	37.1	48.5	25.4	28.5
September	33.0	32.9	21.0	19.9
October	17.8	17.1	13.0	16.5
November	16.8	16.8	11.9	14.5
December	18.1	14.6	12.0	14.1

10L-23L1. City of Hines. Municipal well 12 inches in diameter and 340 feet deep; kind and amount of casing unknown. Deep-well turbine with rated capacity 600 gallons a minute, driven by a 100-horsepower direct-connected motor. Water from the Danforth formation.

Monthly pumpage, in acre-feet

Month	1933	1934	1935	1936
January	2.65	2.11	2.43	2.40
February	3.20	2.49	2.58	2.47
March	2.20	3.68	2.08	2.65
April	2.95	6.69	3.38	5.12
May	8.04	11.6	7.98	9.15
June	13.7	19.4	16.7	14.5
July	21.0	16.3	18.6	21.5
August	17.6	20.4	20.4	17.6
September	13.6	9.45	12.2	9.82
October	4.20	3.41	5.16	6.51
November	3.36	2.86	2.68	4.57
December	2.72	2.86	2.02	a 6.02

a Provisional.

10N-15b3. William McLaren. Irrigation well 18 inches in diameter and 87 feet deep; galvanized stovepipe casing to 53 feet, perforated from 41 to 53 feet with slots about 3/8 inch wide by 1 inch long. Kimball turbine pump driven by a 15-horsepower direct-connected electric motor. Water from deep pervious beds in the valley fill. Well not operated in 1936.

10N-15b3. William McLaren.--Continued

Monthly pumpage, in acre-feet

Month	1933	1934	1935
May	....	20.7	....
June	2.02	19.0	2.50
July	4.86	10.5	5.24
August	3.32	4.07	4.09
September	.84	2.08	....

10P-7L2. Harney Branch Experiment Station. Irrigation well, initially 18 inches in diameter and 86½ feet deep; galvanized 12-gage stove-pipe casing to 60 feet, perforated 42½ to 55 feet with ½-inch drilled holes spaced 1½ inches apart. In March, 1935 the well was cleaned to 93 feet and fitted with standard 12-inch casing from ½ foot to 93 feet (4 feet into clay), perforated from 36 to 86 feet by torch-cut slots about ¼ inch wide, 6 inches long, and 3 inches apart horizontally and vertically. Annular space between casings filled with screened gravel ¼ inch to ¾ inch in size. Water from deep pervious beds in the valley fill. Measurements for 1934, 1935, 1936 made by Obil Shattuck and R. E. Hutchison.

Monthly pumpage, in acre-feet

Month	1933	1934	1935	1936
April	....	17.9	....	....
May	15.7	31.9	14.3	23.6
June	66.0	55.3	66.0	45.2
July	56.7	46.0	44.9	42.0
August	28.0	16.0	46.4	32.3
September	6.6	11.0	17.0	....
October	....	....	1.39	....

10P-7q1. Harney Branch Experiment Station. Irrigation well 8 inches in diameter and 218 feet deep, standard screw-joint casing to about 170 feet, drilled in 1917; measured depth 160 feet in 1920. Deep-well turbine driven by a 10-horsepower direct-connected electric motor. Water from bedrock (Harney formation?). Measurements for 1934, 1935 and 1936 made by Obil Shattuck and R. E. Hutchison.

Monthly pumpage, in acre-feet

Month	1933	1934	1935	1936
April	....	2.55	....	....
May	6.18	21.7	10.3	29.6
June	41.1	46.5	42.5	44.6
July	37.8	44.0	42.2	37.9
August	14.4	21.0	29.6	16.4
September	1.84	5.03	8.51	....
October	....	.....	6.55	....

Walla Walla Basin

(Complete descriptions of the wells appear in
Water-Supply Paper 777, pages 155-160)

9R-13r1. M. O. Beauchamp. Measuring point (1), top of wood well cover at $1\frac{1}{2}$ -inch hole, painted arrow, 2.0 feet above land surface and 684.87 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 11, 1936	642.28	June 4, 1936	642.43	Aug. 27, 1936	641.05
Feb. 6	642.12	25	642.40	Sept. 17	640.78
Mar. 6	641.56	July 10	642.32	Oct. 8	639.97
Apr. 11	641.06	25	642.12	Nov. 12	639.95
May 4	642.32	Aug. 11	641.60	Dec. 10	641.23

9R-24n1. Unknown. Measuring point (1), top of 1-inch pipe at painted arrow, 2.2 feet above land surface and 638.47 feet above mean sea level.

Jan. 9, 1936	629.34	Mar. 5, 1936	628.58	May 5, 1936	a 628.97
Feb. 6	629.29	Apr. 11	629.12		

9S-14L1. Conrad Miller. Measuring point (1), top of concrete curb at northeast side, painted arrow, level with land surface and 789.76 feet above mean sea level.

Jan. 11, 1936	781.19	June 4, 1936	782.79	Aug. 27, 1936	782.14
Feb. 8	781.65	25	782.74	Sept. 17	781.89
Mar. 7	782.43	July 10	782.10	Oct. 9	781.89
Apr. 11	781.99	25	782.52	Nov. 12	781.60
May 4	782.04	Aug. 11	782.66	Dec. 10	781.03

9S-16b1. Claude Winn. Measuring point (1), top of 2- by 4-inch post at northwest corner of well, marked by copper nail and washer, level with land surface and 730.81 feet above mean sea level.

Jan. 11, 1936	728.13	June 4, 1936	726.81	Aug. 27, 1936	725.28
Feb. 8	728.59	25	726.21	Sept. 17	725.77
Mar. 6	729.21	July 10	725.79	Oct. 9	726.19
Apr. 11	729.19	25	725.58	Nov. 12	726.59
May 4	727.33	Aug. 11	725.41	Dec. 10	b 730.04

9S-20g1. Herman Markman. Measuring point (1), top of concrete floor of pump house, at painted arrow, about 1.5 feet below land surface and 734.82 feet above mean sea level.

Jan. 9, 1936	732.79	June 4, 1936	734.07	Aug. 27, 1936	729.38
Feb. 6	733.28	25	c 734.94	Sept. 17	728.12
Mar. 6	732.27	July 10	733.89	Oct. 8	727.52
Apr. 11	732.94	25	733.11	Nov. 12	729.38
May 4	735.93	Aug. 11	731.17	Dec. 10	730.10

9S-20q1. ---- Jackson. Measuring point (2), bottom of tee at top of discharge pipe, about 1.4 feet above land surface and 764.33 feet above mean sea level.

Jan. 9, 1936	731.42	June 4, 1936	738.16	Aug. 27, 1936	729.23
Feb. 6	730.37	25	738.16	Sept. 17	(e)
Mar. 6	728.98	July 10	736.99	Oct. 8	(e)
Apr. 11	730.11	25	734.30	Nov. 12	731.35
May 4	734.84	Aug. 11	d 728.80	Dec. 10	732.90

a Discontinued as observation well.

b Adjacent land being irrigated.

c Well flowing slightly.

d Pump operating in well.

e Well dry.

9S-21h1. ---- Behnke. Measuring point (1), top of concrete curb at south side, painted arrow, level with land surface and 784.62 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 9, 1936	765.35	June 4, 1936	771.72	Aug. 27, 1936	759.10
Feb. 6	764.85	25	770.78	Sept. 17	761.46
Mar. 6	767.55	July 10	767.77	Oct. 8	764.44
Apr. 11	764.58	25	763.41	Nov. 12	f 765.57
May 8	768.70	Aug. 11	760.62	Dec. 10	767.49

9S-24c1. William Pomeroy. Measuring point (1), top of plank cover near southeast corner of trap door, above a copper nail and washer in vertical edge of plank, level with land surface, and 851.04 feet above mean sea level.

Jan. 10, 1936	819.24	June 4, 1936	820.39	Aug. 27, 1936	819.39
Feb. 8	819.19	25	820.64	Sept. 17	819.19
Mar. 7	820.01	July 10	820.94	Oct. 9	819.24
Apr. 11	819.91	25	820.34	Nov. 12	818.72
May 8	819.97	Aug. 11	819.95	Dec. 10	818.13

9S-24q1. C. B. Miller. Measuring point (2), top of concrete curb at pump-discharge pipe, 0.4 foot above land surface and 862.56 feet above mean sea level. Altitude shown in Water-Supply Paper 777 is incorrect. Measuring point (3), top of 3- by 6-inch timber collar of concrete pit curb, 0.44 foot above top of curb which is level with land surface and 862.64 feet above mean sea level.

Jan. 10, 1936	850.85	June 4, 1936	844.94	Aug. 27, 1936	844.83
Feb. 8	850.74	25	845.57	Sept. 17	g 845.56
Mar. 7	853.31	July 10	842.17	Oct. 9	846.92
Apr. 11	852.83	25	848.43	Nov. 13	843.68
May 8	852.85	Aug. 11	837.96	Dec. 10	842.68

9S-26c2. Boerstler estate. Measuring point (2), top of well cover near center of west side, open slot, 0.6 foot above land surface and 867.70 feet above mean sea level. Measuring point (3), top of tee in galvanized-iron pipe, at southeast corner of well (benchmark), 0.6 foot above land surface and 867.72 feet above mean sea level.

Jan. 10, 1936	848.26	June 4, 1936	g 857.85	Aug. 27, 1936	841.04
Feb. 8	848.10	25	854.91	Sept. 17	848.14
Mar. 7	856.95	July 10	852.00	Oct. 9	851.12
Apr. 11	848.35	25	d 842.77	Nov. 12	843.43
May 8	855.13	Aug. 11	d 841.23	Dec. 10	845.07

9S-26p1. O. K. Goodman. Measuring point (1), top of 2- by 4-inch timber at southeast corner of trap in well cover, copper nail and washer in vertical face of timber below point, 2.9 feet above land surface and 908.97 feet above mean sea level. Except as indicated by footnote, levels are from float-gage readings by O. K. Goodman, owner.

Jan. 3, 1936	865.82	Jan. 23, 1936	864.85	Feb. 12, 1936	871.44
5	867.26	25	864.49	14	874.86
7	867.19	27	864.13	16	879.94
9	866.90	29	864.09	18	882.39
10	h 866.53	31	865.09	20	882.93
11	866.19	Feb. 2	865.34	22	880.75
13	866.56	4	866.26	24	890.14
15	865.86	6	866.67	26	888.91
17	864.97	8	866.54	28	886.97
19	864.86	8	h 866.63	Mar. 1	886.98
21	864.88	10	868.64	3	885.92

b Adjacent land being irrigated.

g New measuring point

d Pump operating in well.

established.

h Tape measurement by J. M. Spencer, Watermaster, District no. 5.

j Water entering well from irrigation ditch.

9S-26pl. O. K. Goodman.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 5, 1936	883.87	May 29, 1936	891.05	Aug. 11, 1936	h 867.09
7	881.89	31	891.53	13	b 868.51
9	h 881.97	June 1	891.67	15	867.94
11	878.95	3	891.32	17	868.12
13	876.40	4	h 890.03	19	868.47
15	874.32	5	889.22	21	868.74
17	872.76	7	887.82	23	868.65
19	870.81	9	888.12	25	868.72
21	869.05	11	886.92	27	870.47
23	867.83	13	885.35	29	h 870.64
25	867.34	15	884.80	31	869.62
27	866.00	17	884.72	Sept. 1	870.06
29	865.11	19	883.10	3	870.17
31	864.44	21	881.15	5	871.71
Apr. 1	864.00	23	879.64	7	872.57
3	863.86	25	878.67	9	874.52
5	(i)	27	h 878.82	11	874.97
7	864.27	29	878.12	13	874.87
9	864.57	July 1	876.69	15	h 874.90
11	h 864.65	3	875.77	17	875.23
13	865.05	5	875.42	19	875.82
15	866.06	7	874.10	21	876.63
17	867.49	9	873.37	23	h 876.57
19	869.95	11	873.15	25	875.31
21	872.19	13	h 874.39	27	875.62
23	872.89	15	873.77	29	875.91
25	872.72	17	873.87	Oct. 1	875.03
27	872.51	19	873.24	3	875.13
29	873.01	21	873.90	5	875.27
May 1	876.21	23	871.87	7	875.12
3	878.44	25	870.62	9	873.95
5	880.96	27	869.86	11	872.59
7	882.69	29	869.40	13	871.44
9	h 882.83	31	h 869.37	15	870.50
11	882.14	Aug. 1	868.77	17	h 870.36
13	884.41	3	868.47	19	869.57
15	887.27	5	868.00	21	869.59
17	888.55	7	867.82	23	867.97
19	889.37	9	868.00	25	867.12
21	889.79	11	867.90		866.62
23	890.64		867.32		865.84
25	890.15		867.84		864.70
27	889.26		867.50		(j)
	890.54				

9S-28hl. W. J. Rand. Measuring point (2), top of 4- by 4-inch pump support near southwest corner of well, vertically above copper nail with washer, 0.6 foot above land surface and 829.66 feet above mean sea level.

Jan. 9, 1936	817.98	June 4, 1936	819.76	Aug. 27, 1936	817.22
Feb. 6	818.08	25	819.44	Sept. 17	817.80
Mar. 6	818.26	July 10	818.98	Oct. 8	818.22
Apr. 11	818.63	25	818.34	Nov. 12	818.71
May 8	819.04	Aug. 11	817.61	Dec. 10	818.59

h Tape measurements by J. M. Spencer, Watermaster, District no. 5.

i Well dry, Apr. 3-7, 3 readings in the period.

j Well dry, Oct. 25 to Dec. 31, 37 readings in the period.

b Adjacent land being irrigated.

9S-28nl. Lottie M. McKnight. Measuring point (1), top of concrete curb, north side of well, painted arrow, level with land surface and 817.01 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 9, 1936	800.78	June 4, 1936	808.71	Aug. 27, 1936	796.03
Feb. 6	798.05	25	807.90	Sept. 17	796.88
Mar. 5	795.01	July 10	805.04	Oct. 8	800.21
Apr. 11	800.23	25	800.41	Nov. 12	805.24
May 8	803.57	Aug. 11	797.21	Dec. 10	802.23

9S-29ml. John Patras. Measuring point (1), top of concrete curb, northwest corner of well, painted mark, level with land surface and 758.18 feet above mean sea level.

Jan. 9, 1936	740.70	June 4, 1936	741.47	Aug. 27, 1936	738.63
Feb. 6	739.77	25	746.21	Sept. 17	738.63
Mar. 5	740.42	July 10	743.86	Oct. 8	737.43
Apr. 11	743.03	25	742.15	Nov. 12	741.53
May 8	744.38	Aug. 11	739.15	Dec. 10	745.64

9S-30ml. S. E. Givens. Measuring point (1), top of wood well cover, east side of well, painted arrow, 2.6 feet above land surface and 689.81 feet above mean sea level.

Feb. 6, 1936	662.20	June 25, 1936	672.89	Sept. 17, 1936	660.76
Mar. 5	662.79	July 10	669.59	Oct. 8	660.66
Apr. 11	664.41	25	667.25	Nov. 12	664.83
May 8	669.81	Aug. 11	663.44	Dec. 10	667.39
June 4	673.49	27	661.34		

9S-34cl. Alpha Reese. Measuring point (1), top of concrete curb, north side of well, painted arrow, 0.6 foot above land surface and 882.15 feet above mean sea level. Except as indicated by footnote, levels are from float-gage readings by Alpha Reese, owner.

Jan. 3, 1936	835.00	Feb. 8, 1936	834.91	Mar. 21, 1936	845.70
5	834.85	11	834.95	24	843.78
7	834.82	13	834.96	28	k 841.95
9	834.80	15	835.01	Apr. 11	h 836.96
9	h 834.85	17	835.06	May 8	h 854.54
12	834.74	19	835.09	June 4	h 867.81
15	834.69	23	835.14	25	d, h 855.50
17	834.60	27	835.21	July 10	d, h 843.06
19	834.66	29	839.23	25	d, h 838.91
23	834.79	Mar. 2	840.99	Aug. 11	d, h 832.49
25	834.79	5	844.62	27	d, h 832.84
28	834.92	6	h 845.67	Sept. 12	h 841.52
Feb. 1	834.93	8	846.81	17	h 844.50
4	834.91	11	846.81	Oct. 8	h 847.51
6	834.90	15	846.82	Nov. 12	h 842.18
6	h 834.91	18	845.89	Dec. 10	h 837.71

9S-36cl. Redfern. Measuring point (1), top of concrete curb, west side of well at trap door, painted arrow, 2.2 feet above land surface and 928.15 feet above mean sea level.

Jan. 10, 1936	899.15	June 4, 1936 d	910.41	Aug. 27, 1936 d	889.35
Feb. 8	892.05	25	893.19	Sept. 17	890.92
Mar. 7	912.05	July 10	891.13	Oct. 9	888.49
Apr. 11	907.49	25	889.36	Nov. 12	888.87
May 8	914.73	Aug. 11	886.71	Dec. 10	(e)

d Pump operating in well.

e Well dry.

h Tape measurement by J. M. Spencer, Watermaster, District no. 5.

k Readings by owner discontinued.

9S-36hl. Walter Herman. Measuring point (1), top of concrete curb, east side of well, painted arrow, 2.0 feet above land surface and 931.75 feet above mean sea level. Except as indicated by footnote, levels are from float-gage readings by Walter Herman, owner.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 2, 1936	894.84	Mar. 30, 1936	911.72	July 7, 1936	910.67
4	896.07	31	911.60	10	h 910.14
6	898.03	Apr. 2	911.09	11	909.96
7	899.43	4	910.74	13	910.06
10	h 902.28	10	911.22	17	909.02
11	902.43	11	911.31	19	908.47
12	902.69	11	h 911.43	21	908.03
13	903.16	14	912.28	23	907.37
17	904.29	15	912.8	25	h 906.70
19	904.25	17	915.24	26	906.46
20	904.05	18	916.0	30	905.16
22	903.30	22	917.99	Aug. 5	903.70
24	902.43	24	919.02	11	h 902.57
26	901.86	25	919.63	13	902.43
28	901.22	27	920.21	18	902.49
30	900.59	28	920.2	19	902.54
Feb. 3	899.58	29	920.20	21	902.29
4	899.16	May 2	920.50	22	902.09
5	898.96	5	921.19	25	902.48
8	898.01	7	921.74	27	902.48
8	h 897.93	8	h 921.84	27	h 902.46
10	897.34	12	922.41	30	902.47
11	897.07	13	922.81	31	902.52
13	896.74	15	923.25	Sept. 1	902.6
14	896.71	16	923.54	2	902.60
15	896.74	17	923.80	3	902.8
16	896.90	19	923.79	4	903.00
17	897.48	20	923.51	10	903.79
19	900.27	22	923.03	12	903.47
21	903.80	25	922.87	15	903.33
24	908.06	26	922.65	17	h 903.32
26	909.85	28	922.63	21	903.79
29	911.92	June 2	921.90	23	903.62
Mar. 3	913.75	4	921.59	25	903.4
4	914.00	4	h 921.52	28	902.8
6	914.57	5	921.43	Oct. 3	902.11
7	h 914.97	6	921.19	5	902.10
8	915.19	10	919.18	11	901.44
10	915.37	15	916.89	12	h 901.21
11	915.47	17	916.10	13	901.04
12	915.57	18	915.58	15	900.68
14	915.40	23	913.93	16	900.50
15	915.21	25	913.28	19	900.10
18	914.61	25	h 913.19	21	899.33
21	913.72	28	912.55	23	m 898.81
25	912.86	30	912.27	Nov. 13	h 897.32
27	912.39	July 4	911.70	Dec. 10	h 897.59

10S-1cl. John Clark. Measuring point (1), top of wood girder of well cover, west side of well, marked by copper nail and washer, level with land surface and 995.60 feet above mean sea level.

Jan. 10, 1936	972.06	June 4, 1936	973.83	Aug. 27, 1936	d 965.17
Feb. 8	970.86	25	d 969.50	Oct. 12	969.51
Mar. 7	975.62	July 10	969.88	Nov. 13	969.34
Apr. 11	974.52	25	964.07	Dec. 10	970.14
May 8	977.49	Aug. 11	965.58		

d Pump operating in well.

h Tape measurement by J. M. Spencer, Watermaster, District no. 5.

m Float gage readings discontinued temporarily.

10S-2c1. E. J. McSherry. Measuring point (1), top of plank pump support, painted arrow, level with land surface and 975.82 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 11, 1936	964.82	June 4, 1936	964.94	Aug. 27, 1936	961.87
Feb. 6	957.17	25	961.65	Sept. 17	960.88
Mar. 7	958.77	July 10	962.69	Oct. 12	959.24
Apr. 11	958.37	25	960.45	Nov. 12	958.30
May 8	960.56	Aug. 11	961.86	Dec. 10	956.36

10S-3h1. J. M. Morse estate. Measuring point (2), top of concrete curb 0.8 foot north of outside southeast corner, 0.8 foot above land surface and 959.05 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 9, 1936	925.50	June 4, 1936	942.53	Aug. 27, 1936	940.06
Feb. 6	924.51	25	941.44	Sept. 17	937.77
Mar. 6	932.91	July 10	941.53	Oct. 8	935.77
Apr. 11	928.95	25	940.49	Nov. 12	924.23
May 8	937.88	Aug. 11	939.89	Dec. 10	926.60

Willamette Valley

(Complete descriptions of the wells appear in Water-Supply Paper 777, pages 145-149)

8H-4c1. W. J. Gering. Measuring point (1), top of tile casing at east side, 1.8 feet above land surface and 125.37 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 6, 1936	109.65	Apr. 13, 1936	111.50	July 13, 1936	108.38
13	112.62	20	110.92	20	108.68
20	111.85	27	111.08	27	108.36
27	111.29	May 4	110.95	Aug. 3	108.08
Feb. 3	111.10	11	110.50	10	107.89
10	110.95	18	110.91	17	107.56
19	111.00	25	110.46	27	107.55
24	111.18	June 1	109.86	31	107.40
Mar. 2	112.61	8	109.56	Sept. 8	107.07
9	111.91	15	109.80	14	107.15
16	112.03	22	109.39	21	106.90
23	110.95	29	109.15	28	106.86
30	112.47	July 6	108.90	Oct. 1	(n)
Apr. 6	112.06				

8H-34r1. Johnson School. Measuring point (1), top of tile casing at east side, 1.8 feet above land surface and 174.66 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 6, 1936	158.06	Apr. 6, 1936	170.48	July 6, 1936	159.75
13	172.06	13	169.60	13	159.35
20	171.98	20	168.23	20	158.77
27	171.01	27	167.72	27	158.59
Feb. 3	171.13	May 4	166.29	Aug. 3	157.94
10	169.67	11	166.02	10	157.80
19	140.08	18	166.00	17	157.32
24	171.90	25	164.59	27	157.14
Mar. 2	171.29	June 1	163.66	31	156.83
9	170.48	8	162.84	Sept. 8	156.62
16	170.15	15	161.93	14	156.80
23	169.73	22	160.95	21	156.43
30	171.25	29	160.73	28	156.25

n Measurements of ground-water levels by U. S. Engineer Department discontinued Oct. 1, 1936.

9E-13b1. George Fuller. Measuring point (1), top of casing, about 0.5 foot above land surface and 151.59 feet above mean sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 6, 1936	134.08	Apr. 6, 1936	141.30	July 6, 1936	135.62
13	141.55	13	140.16	13	134.77
20	140.68	20	140.00	20	134.55
27	138.91	27	139.28	27	133.04
Feb. 3	139.80	May 4	138.87	Aug. 3	131.68
10	139.67	11	140.35	10	132.78
19	140.08	18	d 127.53	17	132.27
24	d 151.76	25	138.11	24	130.76
Mar. 2	138.25	June 1	137.55	31	129.18
9	136.50	8	137.31	Sept. 8	131.27
16	136.45	15	136.90	14	131.13
23	139.95	22	136.40	21	130.52
27	139.45	29	136.00	28	128.50
30	141.27				

10G-33r1. Gideon E. Stolz. Measuring point (3), top of timber pump support at 1-inch bored hole, 1.0 foot above land surface and 133.16 feet above mean sea level.

Jan. 7, 1936	108.54	Apr. 7, 1936	111.95	July 9, 1936	107.97
14	112.03	14	112.29	14	107.57
21	114.18	21	112.04	21	108.19
28	113.03	28	111.19	28	106.78
Feb. 4	113.19	May 5	111.43	Aug. 4	106.89
11	112.51	12	109.83	11	106.57
19	112.72	19	111.19	18	105.76
24	112.34	26	d 110.40	25	105.69
Mar. 3	113.41	June 2	109.93	Sept. 1	105.28
9	113.57	9	109.63	9	105.26
16	112.80	16	109.12	15	105.16
24	112.55	23	108.60	22	105.02
31	111.84	30	108.42	29	104.80

10K-7m1. Fred Lucht. Measuring point (1), top of 2-inch plank well cover, 1.0 foot above land surface and 259.49 feet above mean sea level.

Jan. 6, 1936	258.21	Mar. 16, 1936	256.64	June 29, 1936	250.45
10	257.61	23	255.88	July 8	249.68
13	258.17	30	257.84	13	249.46
20	257.69	Apr. 6	257.90	20	249.15
24	257.46	13	255.65	28	248.64
27	256.72	20	254.77	Aug. 3	248.04
31	256.51	27	254.34	10	247.81
Feb. 3	255.87	May 4	253.52	17	247.15
7	256.32	11	253.29	24	246.76
10	256.17	18	253.02	31	245.21
17	256.32	25	252.43	Sept. 8	p 244.90
24	258.14	June 1	251.25	14	245.99
28	257.73	8	252.01	21	245.87
Mar. 2	257.40	15	252.69	28	245.44
9	256.42	22	251.00		

14F-12f1. Henry Hoefer. Measuring point (1), top of tile casing at southwest side, 1.7 feet above land surface and 187.44 feet above mean sea level.

Jan. 1, 1936	166.29	Jan. 24, 1936	171.09	Feb. 20, 1936	170.03
7	172.34	28	170.09	25	170.32
10	175.84	31	171.59	Mar. 3	170.57
14	178.12	Feb. 4	168.71	10	171.12
21	171.79	12	168.89	17	171.78

d Pump operating in well.

p Well pumped intermittently prior to measurement.

14F-12f1. Henry Hoefer.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 24, 1936	167.89	June 2, 1936	166.94	Aug. 4, 1936	165.34
31	168.04	9	166.81	11	164.64
Apr. 7	167.69	16	166.73	18	165.09
14	167.79	23	166.62	25	164.80
21	167.33	30	166.33	Sept. 1	164.73
28	167.49	July 9	166.30	9	164.48
May 5	167.39	14	166.29	15	164.69
12	166.61	21	166.79	22	163.91
19	167.42	28	165.63	29	163.68
26	167.71				

15E-36q1. Oregon Agricultural Experiment Station. Measuring point (2), top of 8-inch casing, level with zero of staff gage on east face of pit curb, 21.5 feet below land surface and 197.08 feet above mean sea level. Measuring point (3), top of 6- by 6-inch timber collar of concrete pit curb, 2.4 feet above land surface and 220.98 feet above mean sea level. Altitude in Water-Supply Paper 777 is incorrect.

Jan. 2, 1936	197.78	Apr. 8, 1936	201.22	July 8, 1936	(d)
9	205.58	15	202.44	15	192.73
15	203.97	22	201.00	22	190.90
22	208.79	29	200.70	29	(d)
29	205.18	May 6	200.67	Aug. 5	196.12
Feb. 5	202.59	13	200.56	12	195.25
12	200.89	20	200.19	19	192.15
21	200.78	27	200.01	26	(d)
26	203.72	June 3	199.36	Sept. 2	d 180.35
Mar. 4	204.60	10	199.10	10	d 178.27
11	203.98	17	198.78	16	195.58
18	201.58	24	198.53	23	d 190.16
25	200.58	July 1	197.98	30	188.59
Apr. 1	200.38				

16G-9r1. J. H. Swatzka. Measuring point (1), top of 2-inch plank deck, 0.2 foot above land surface and 272.9 feet above mean sea level. Used for all measurements beginning Oct. 4, 1935; new point not established Nov. 6, 1935, as indicated in Water-Supply Paper 777.

Jan. 1, 1936	264.73	Mar. 18, 1936	269.70	July 1, 1936	265.95
3	264.94	25	269.26	10	265.17
8	270.53	Apr. 1	270.38	15	264.71
10	270.90	8	270.22	22	265.16
15	270.92	15	269.50	29	263.48
22	270.38	22	268.86	Aug. 5	262.78
24	269.72	29	268.46	12	262.55
29	269.92	May 6	268.52	19	262.96
31	270.28	13	268.88	26	260.79
Feb. 5	269.55	20	268.82	Sept. 2	260.63
12	269.62	27	268.40	10	260.75
20	268.91	June 3	267.82	16	259.10
26	269.94	10	267.43	23	258.65
Mar. 4	270.42	17	267.10	30	258.53
11	269.90	24	266.60		

16H-14c1. Ray Fisher. Measuring point (3), top of 6- by 6-inch pump support at painted arrow, 1.0 foot above land surface and 353.15 feet above mean sea level.

Jan. 1, 1936	339.98	Feb. 5, 1936	342.01	Mar. 11, 1936	341.00
8	346.09	12	341.50	18	340.50
15	345.19	20	341.47	25	340.36
22	343.20	26	341.60	Apr. 1	340.38
29	341.62	Mar. 4	341.57	8	340.63

d Pump operating in well.

16H-14c1. Ray Fisher.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 15, 1936	340.40	June 17, 1936	339.33	Aug. 12, 1936	337.81
22	340.34	24	339.33	19	337.80
29	340.13	July 1	(d)	26	337.46
May 6	340.15	9	339.90	Sept. 2	337.41
13	339.23	15	338.58	10	d 336.30
20	339.01	22	337.91	16	336.42
27	340.01	29	338.15	23	337.51
June 3	339.63	Aug. 5	337.94	30	337.31
10	339.47				

17G-34n1. Keeney School, District 51. Measuring point (1), lower valve seat of pump, 2.5 feet above concrete platform and land surface and 287.5 feet above mean sea level.

Jan. 2, 1936	282.38	Mar. 18, 1936	281.77	July 1, 1936	279.83
3	282.70	25	281.82	10	279.65
8	283.96	Apr. 1	282.33	15	279.44
10	284.23	8	282.12	22	279.04
15	282.99	15	282.20	29	278.71
22	282.73	22	281.36	Aug. 5	278.39
24	282.34	29	281.26	12	278.13
29	281.93	May 6	280.86	19	278.53
31	282.81	13	281.46	26	277.66
Feb. 5	281.98	20	281.22	Sept. 2	277.39
13	281.25	27	281.32	10	277.30
20	280.76	June 3	280.72	16	277.28
26	282.83	10	280.48	23	277.02
Mar. 4	280.68	17	280.71	30	276.86
11	282.62	24	280.18		

19F-32m1. Junction City. Measuring point (1), top face of manhole rim at southeast side, level with street surface and 323.4 feet above mean sea level.

Jan. 3, 1936	315.81	Apr. 9, 1936	317.71	July 9, 1936	315.58
10	317.89	16	317.44	16	315.44
16	319.69	23	317.14	23	315.07
22	318.56	30	317.11	30	314.75
30	317.83	May 7	317.36	Aug. 6	314.59
Feb. 6	317.69	14	317.54	13	314.41
13	317.97	21	317.44	20	314.08
22	319.90	28	316.76	27	313.95
27	318.93	June 4	316.57	Sept. 3	313.79
Mar. 5	318.01	11	316.57	11	313.71
12	317.61	18	316.40	17	313.45
19	317.19	25	316.26	24	313.42
26	318.32	July 2	315.97	Oct. 1	313.41
Apr. 2	317.71				

20G-32g3. Leo Sidwell. Measuring point (3), inner lip of tile casing at south side, level with land surface and 388.98 feet above mean sea level.

Jan. 2, 1936	377.46	Apr. 2, 1936	380.04	July 11, 1936	377.43
3	377.94	9	378.35	16	377.36
9	381.23	15	378.16	23	377.27
16	382.45	23	378.28	30	377.08
23	381.24	30	378.20	Aug. 6	376.98
30	381.75	May 7	378.16	13	376.88
Feb. 6	379.40	14	378.77	20	376.83
13	379.80	21	377.86	27	376.72
21	379.29	28	377.46	Sept. 3	376.66
28	380.02	June 4	377.11	11	376.43
Mar. 5	379.89	11	377.06	17	376.40
12	380.21	18	376.98	24	376.17
19	379.67	25	377.72	Oct. 1	376.55
26	379.71	July 2	377.43		

d Pump operating in well.

PENNSYLVANIA

By Stanley W. Lohman

The State-wide observation well program in Pennsylvania^{1/} was continued in 1936 by the United States Geological Survey in cooperation with The Pennsylvania Topographic and Geologic Survey. At the end of the year weekly water level measurements were being made in 32 wells, one of which was also equipped with a 7-day automatic recorder, and monthly measurements were being made in one well. The monthly measurements on the one well were discontinued January 1, 1937, and weekly measurements on four wells were discontinued during July and August 1936. Weekly water-level measurements in five new wells were begun during those months, thus a total of 37 wells were under periodic observation during part of 1936. A total of 1,584 water-level measurements were made of 1936.

During July and August 1936 the writer visited all the observation wells. New and more substantial measuring points were established at most of the wells, and new wooden platforms were installed on 10 wells. Benchmarks were established at most of the wells and tied in instrumentally to the measuring points. Sketch maps, photographs, and additional descriptive notes were made for each well.

A report^{2/} describing the ground-water resources of northwestern Pennsylvania was published in 1936 by the Pennsylvania Topographic and Geologic Survey. In plate 6 of this report are hydrographs of seven wells, for five of which the complete water-level measurements are tabulated at the end of the present report. The five wells are No. 26, Armstrong County; No. 103, Clarion County; No. 1, Erie County; No. 30, Forest County; and No. 5, Mercer County.

The complete water-level measurements of only one individual well, No. 100, at Montrose, Susquehanna County, are given in Water-Supply Paper 777 on pages 168-169. The present report contains the records for 1936 at well 100, together with the well descriptions and complete water-level measurements for all wells now under observation. The records of 15 discontinued wells are not included, but most of them were used in computing the weekly averages. The weekly average water levels given in Water-Supply Paper 777 on pages 165-166 have been readjusted, and the complete new table of weekly average water levels is given below.

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777 pp. 160-169, 1936.

^{2/} Leggette, R. M., Ground water in northwestern Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. W3, 215 pp., 9 pls., 15 figs., 1936.

WATER-LEVEL FLUCTUATIONS

The precipitation during 1936 was 0.48 inch above average, and as shown in the table of average water levels, the average ground-water level in all observation wells in the State stood 0.76 foot higher on January 2, 1937, than on January 4, 1936.

In 1936 the total range of fluctuation in the average weekly water level was 7.87 feet, the largest on record. The highest average stage, 17.87 feet, occurred on March 21, and the low stage, 10.00 feet, occurred on September 26. The average annual range for the 5 years of record is 5.15 feet, from a minimum of 3.85 feet in 1934 to the maximum given above for 1936. The former maximum of 5.22 feet occurred in 1932.

The precipitation in January 1936 was 30 percent above average and the ground-water levels rose steadily until January 18. During the second coldest February in 30 years the precipitation occurred largely as snow, and the ground was frozen. Accordingly the water levels declined rapidly until February 22. There was considerable snow in February although the precipitation was below normal. A rise in temperature produced a general thaw during the last week in February, which raised the average water level more than 2 feet in one week. March was warm, and its precipitation heavier than in any other March on record. Heavy rains and the further melting of the snow on March 11 and 12 flooded all streams in the State and sent the average ground-water level to the high stage of 16.88 feet on March 14. A second deluge, from March 17 to March 19, produced the most devastating flood in the history of Pennsylvania, and sent the already high ground-water levels to the highest average stage during the 5 years of record--17.87 feet on March 21.

The precipitation from April 1 through September was considerably below normal, except in August. Except for slight rises during the weeks ending April 11, June 20, and August 29, the ground-water levels declined steadily until they reached an average stage of only 10.00 feet on September 26 - the lowest stage since September 1932, despite the record-breaking high stage reached during the spring.

In October the precipitation was above normal and produced widespread recharge. In November the average precipitation for the State was below normal, owing to drought in southeastern Pennsylvania, but heavy rains on November 4 and 5 in the western part of the State produced an abrupt rise of about $2\frac{1}{2}$ feet in the average water level for the whole State by November 7. After this rise the water levels again

declined until December 5. December was moderately warm and wet, and during the month the average water level rose more than 2 feet.

Thus the rather unusual combination in 1936 of a major flood and a severe drought in the same year was accompanied by the highest average water level and the next to lowest average water level during the period of record.

Weekly average water levels in observation wells in
Pennsylvania, in feet above an arbitrary datum.

Date	Number of wells	Water level (feet)	Date	Number of wells	Water level (feet)
1931			1932		
Nov. 28	32	10.00	Dec. 3	30	12.95
Dec. 5	32	10.17	10	30	12.59
12	32	10.67	17	30	12.39
19	32	11.34	24	30	12.41
26	32	11.40	31	30	13.26
1932			1933		
Jan. 2	32	11.81	Jan. 7	30	13.19
9	32	12.93	14	30	13.00
16	32	12.74	21	30	13.01
23	32	12.98	28	30	13.79
30	32	13.21	Feb. 4	30	13.46
Feb. 6	32	13.51	11	30	13.33
13	32	13.68	18	30	13.30
20	32	13.27	25	30	13.55
27	32	12.84	Mar. 4	30	13.30
Mar. 5	32	12.73	11	30	13.68
12	32	12.62	18	30	14.87
19	32	12.83	25	30	15.24
26	33	13.70	Apr. 1	30	15.04
Apr. 2	33	14.95	8	30	15.28
9	33	14.42	15	30	15.40
16	33	14.18	22	30	15.31
23	33	13.70	29	30	14.41
30	33	13.13	May 6	30	14.09
May 7	33	13.28	13	31	14.69
14	33	14.32	20	31	14.38
21	33	13.64	27	31	14.10
28	33	13.05	June 3	31	13.94
June 4	33	12.68	10	31	13.91
11	33	12.22	17	31	13.21
18	33	12.22	24	31	12.74
25	33	12.02	July 1	31	12.51
July 2	33	12.03	8	31	12.56
9	33	11.98	15	31	12.16
16	33	11.59	22	30	11.76
23	33	11.44	29	30	11.68
30	33	11.33	Aug. 5	30	11.52
Aug. 6	33	11.08	12	29	11.51
13	33	11.00	19	29	11.56
20	33	10.81	26	29	13.17
27	33	10.48	Sept. 2	29	12.86
Sept. 3	33	10.40	9	29	12.83
10	33	10.24	16	29	13.27
17	33	9.96	23	29	12.98
24	33	9.73	30	29	12.64
Oct. 1	33	9.73	Oct. 7	29	12.20
8	31	10.71	14	29	11.77
15	31	10.71	21	29	11.83
22	31	11.22	28	29	11.95
29	31	11.52	Nov. 4	29	11.86
Nov. 5	31	12.04	11	29	11.97
12	31	13.19	18	29	12.28
19	31	13.93	25	29	12.22
26	31	13.48	Dec. 2	29	12.17

Weekly average water levels in observation wells in

Pennsylvania, in feet above an arbitrary datum.--Continued

Date	Number of wells	Water level (feet)	Date	Number of wells	Water level (feet)
1933			1935		
Dec. 9	29	12.16	Mar. 23	24	15.04
16	29	12.29	30	24	14.59
23	29	12.83	Apr. 6	24	14.24
30	29	13.28	13	25	14.81
1934			20	25	14.40
Jan. 6	29	14.14	27	25	14.11
13	30	14.41	May 4	25	14.05
20	30	13.73	11	24	14.71
27	30	13.65	18	24	14.16
Feb. 3	30	13.42	25	24	13.54
10	30	12.84	June 1	24	13.34
17	29	12.46	8	24	12.66
24	29	12.39	15	24	12.36
Mar. 3	29	12.43	22	24	12.66
10	29	12.65	29	24	12.42
17	29	12.58	July 6	24	12.08
24	29	12.82	13	24	12.74
31	29	13.95	20	25	12.44
Apr. 7	29	14.36	27	25	12.89
14	29	14.62	Aug. 3	25	12.62
21	29	14.44	10	25	12.51
28	29	13.74	17	25	12.26
May 5	29	13.66	24	26	11.93
12	29	13.20	31	27	11.56
19	29	12.88	Sept. 7	27	11.55
26	28	12.60	14	28	11.22
June 2	28	12.38	21	28	11.01
9	28	12.06	28	28	10.79
16	28	12.02	Oct. 5	28	10.63
23	27	12.25	12	28	10.50
30	27	11.84	19	28	10.22
July 7	27	11.61	26	29	10.12
14	27	11.32	Nov. 2	29	10.72
21	27	10.92	9	29	10.86
28	27	10.95	16	30	11.73
Aug. 4	27	11.06	23	30	11.80
11	27	11.11	30	30	12.07
18	27	11.35	Dec. 7	30	11.91
25	27	11.06	14	30	12.88
Sept. 1	27	10.77	21	30	13.50
8	27	10.92	28	30	13.05
15	27	11.01	1936		
22	27	11.82	Jan. 4	30	13.34
29	26	12.07	11	30	13.54
Oct. 6	26	12.44	18	30	13.81
13	26	12.28	25	30	13.46
20	26	11.82	Feb. 1	30	13.03
27	26	11.62	8	30	12.71
Nov. 3	25	11.75	15	30	12.52
10	25	12.20	22	30	12.55
17	25	12.14	29	30	14.61
24	25	12.53	Mar. 7	30	15.38
Dec. 1	25	13.37	14	30	16.88
8	25	13.30	21	30	17.87
15	25	12.96	28	30	16.56
22	25	12.89	Apr. 4	30	15.76
29	25	13.12	11	30	16.15
1935			18	30	15.35
Jan. 5	23	13.08	25	30	14.61
12	23	13.87	May 2	30	14.10
19	23	13.51	9	30	13.72
26	23	13.64	16	30	13.25
Feb. 2	24	13.30	23	30	12.91
9	24	13.04	30	30	12.55
16	24	13.54	June 6	30	12.20
23	24	13.75	13	30	11.92
Mar. 2	24	14.31	20	30	11.97
9	24	14.62	27	30	11.71
16	24	15.03	July 4	30	11.59

Weekly average water levels in observation wells in
Pennsylvania, in feet above an arbitrary datum--Continued

Date	Number of wells	Water level (feet)	Date	Number of wells	Water level (feet)
1936			1936		
July 11	31	11.32	Oct. 17	32	10.70
18	31	11.04	24	31	10.88
25	32	10.89	31	31	10.99
Aug. 1	35	10.78	Nov. 7	31	12.57
8	35	10.82	14	31	12.42
15	35	10.76	21	31	12.12
22	35	10.70	28	31	11.81
29	35	11.14	Dec. 5	31	11.73
Sept. 5	35	10.87	12	31	12.84
12	35	10.53	19	31	13.14
19	35	10.29	26	31	13.44
26	32	10.00	1937		
Oct. 3	32	10.10	Jan. 2	31	14.10
10	32	10.15			

WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

On the following pages are given descriptions and weekly water levels for the 32 wells under observation at the end of the year. These descriptions and measurements are arranged alphabetically by counties, and by numbers within the counties. The original field numbers of the wells are used.

For each well that was measured on November 28, 1931, the water levels are expressed in feet above an assumed datum that is 10 feet below the water level in the well on that date. For each well added since that date a datum was assumed that gave the well, at the beginning of its record, a stage equal to the average stage for all other wells in the State on the same date. Thus, for any well all water levels given are exactly comparable, even though the measuring points may have been changed several times, and they are approximately comparable with the water levels given for other wells and with the average water levels given in the preceding table.

Armstrong County

26. Owner, Harry V. Mathews. Observer, Howard H. Mathews. In farm yard 300 feet west of Mahoning Creek, 0.2 mile southwest of Milton, 2 miles north-northeast of Dayton, in the Smicksburg quadrangle. Well is at first house on left (south) side of road, southwest of old covered bridge west of Milton. Altitude about 1,140 feet. Unused dug well, curbed with stone, depth 28.8 feet, in sandstone of the Allegheny formation. No pumped wells nearby. Measuring point, top of brass plate on wooden cover, 1.0 foot above land surface, 24.50 feet above datum, and 1.51 feet below benchmark, which is highest point within chiseled circle on highest point of sandstone outcrop 10 feet northwest of well. Water level Nov. 29, 1931, 14.50 feet below measuring point. Measured by wetted-tape method. Hydrograph on plate 6 of Pennsylvania Geological Survey Bulletin W3, 1936

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 11, 1931	5.65	Dec. 4, 1932	9.54	Dec. 31, 1933	10.98
15	7.94	11	9.46	Jan. 7, 1934	10.62
22	9.44	18	10.59	14	10.01
29	10.00	25	10.10	21	9.98
Dec. 6	10.70	Jan. 1, 1933	9.85	28	9.75
13	11.07	8	9.49	Feb. 4	9.48
20	11.13	15	10.26	11	9.23
27	11.63	22	10.21	18	8.97
Jan. 3, 1932	10.96	29	10.07	25	9.60
10	10.51	Feb. 5	10.03	Mar. 4	9.20
17	11.48	12	10.26	11	9.31
24	11.25	19	10.71	18	9.30
31	10.61	26	10.00	25	9.82
Feb. 7	10.10	Mar. 5	10.20	Apr. 1	10.26
14	9.78	12	11.23	8	10.69
21	9.61	19	10.72	15	10.32
28	9.37	26	10.45	22	9.90
Mar. 6	9.19	Apr. 2	10.31	29	9.82
13	9.29	9	10.34	May 6	9.92
20	9.64	16	10.12	13	9.88
27	10.25	23	9.70	20	9.63
Apr. 3	10.11	30	9.50	27	9.22
10	10.24	May 7	10.39	June 3	11.88
17	9.75	14	10.09	10	7.65
24	10.45	21	10.41	17	9.10
May 1	9.28	28	9.39	24	8.24
8	10.12	June 4	10.31	July 1	9.30
15	9.86	11	10.53	8	7.99
22	9.55	18	9.22	15	5.24
29	9.65	25	7.98	22	3.18
June 5	7.53	July 2	7.77	29	2.15
12	6.16	9	5.66	Aug. 5	2.80
19	5.89	16	3.81	12	3.40
26	7.27	23	2.84	19	8.24
July 3	7.93	30	2.51	26	4.79
10	7.19	Aug. 5	2.24	Sept. 2	3.60
17	5.52	12	1.94	9	7.67
24	5.03	19	1.97	16	4.96
31	3.54	26	3.43	23	9.15
Aug. 7	3.30	Sept. 3	2.42	30	9.34
14	2.34	10	1.81	Oct. 7	9.26
21	1.94	17	1.63	14	9.05
28	1.92	24	1.52	21	9.20
Sept. 4	1.52	Oct. 1	1.09	28	9.77
11	1.08	8	.80	Nov. 4	9.04
18	.83	15	.61	11	10.56
25	.65	22	.46	18	10.90
Oct. 2	1.91	29	.50	25	10.69
9	1.00	Nov. 5	2.63	Dec. 2	10.34
16	2.18	12	7.30	9	9.99
23	4.49	19	8.90	16	10.20
30	8.70	26	9.42	23	10.36
Nov. 6	9.53	Dec. 3	9.46	30	10.54
13	10.28	10	9.86	Jan. 6, 1935	10.61
20	9.93	17	10.11	13	13.03
27	9.77	24	10.17	20	10.49

Armstrong County--Continued

26. Owner, Harry V. Mathews.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 27, 1935	10.14	Sept. 29, 1935	5.45	May 17, 1936	7.45
Feb. 3	9.78	Oct. 6	5.38	24	6.99
10	10.20	13	4.88	31	5.81
17	9.95	20	4.88	June 7	4.95
24	10.58	27	5.50	14	4.97
Mar. 3	11.03	Nov. 3	6.78	21	4.58
10	10.46	10	9.10	28	3.76
17	10.60	17	8.30	July 5	2.62
24	10.67	24	8.00	12	1.80
31	9.72	Dec. 1	9.42	19	1.47
Apr. 7	9.82	8	10.06	26	1.05
14	9.66	15	9.85	Aug. 2	1.80
21	9.50	22	9.39	11	1.71
28	10.19	29	9.41	15	1.39
May 5	10.70	Jan. 5, 1936	9.90	22	.85
12	10.08	12	9.80	29	1.90
19	9.49	19	9.49	Sept. 6	.87
26	9.34	26	9.44	12	.65
June 2	9.15	Feb. 2	8.94	19	.49
9	8.92	9	8.81	26	.35
16	9.38	16	9.00	Oct. 4	3.42
23	9.13	23	10.19	10	4.92
30	9.54	Mar. 1	10.36	18	8.96
July 7	9.08	8	10.31	24	8.58
14	7.61	15	10.96	Nov. 1	9.27
21	9.38	22	10.12	8	10.25
28	9.88	29	10.05	15	9.76
Aug. 4	9.72	Apr. 5	9.81	22	9.35
11	9.50	12	9.40	Dec. 1	8.51
18	9.14	19	8.96	6	8.09
25	7.54	26	7.72	12	9.54
Sept. 1	8.50	May 3	6.93	20	9.76
8	7.48	6	6.82	27	9.69
15	6.53	10	6.80	Jan. 7, 1937	10.18
22	5.45				

Bedford County

45. Owner, Breneman heirs. Observer, George W. Darr. At abandoned house, west corner of First and Liberty Streets, West Saxton (Stonerton), in the Everett quadrangle. Altitude about 900 feet. Unused dug well, curbed with stone, depth 58.3 feet, in red shale of the Catskill formation. No pumped wells nearby. Measuring point, top of steel plate beneath cover of float gage, 2.0 feet above land surface, 62.37 feet above datum, and 1.92 feet above benchmark, which is top of iron lag bolt near base of west side of 18-inch cherry tree 18 feet southwest of well. Water level Nov. 28, 1931, 52.37 feet below measuring point. Equipped with Kinnison float gage.

Nov. 28, 1931	10.00	Apr. 16, 1932	17.84	Sept. 3, 1932	10.88
Dec. 5	9.82	23	15.98	10	10.34
12	10.21	30	14.57	17	10.06
19	12.33	May 7	13.38	24	9.75
26	12.28	14	14.60	Oct. 1	9.53
Jan. 2, 1932	13.42	21	13.64	8	10.52
9	14.99	28	13.35	15	10.49
16	14.52	June 4	13.06	22	10.83
23	14.68	11	12.60	29	10.37
30	14.52	18	12.42	Nov. 5	9.97
Feb. 6	16.52	25	12.33	12	11.48
13	16.46	July 2	12.49	19	12.34
20	15.43	9	11.80	26	13.08
27	14.48	16	11.30	Dec. 3	12.26
Mar. 5	13.81	23	11.16	10	12.08
12	13.13	30	11.29	17	11.78
19	13.06	Aug. 6	11.43	24	11.49
26	14.08	13	11.45	31	12.70
Apr. 2	15.04	20	11.14	Jan. 7, 1933	12.66
9	20.93	27	10.69	14	12.31

Bedford County--Continued

45. Owner, Breneman heirs.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 21, 1933	12.38	June 30, 1934	11.41	Nov. 2, 1935	11.02
28	15.58	July 7	11.23	9	10.89
Feb. 4	14.53	14	10.86	16	10.75
11	14.55	21	10.99	23	11.11
18	14.91	28	11.08	30	11.22
25	15.10	Aug. 4	11.11	Dec. 7	11.07
Mar. 4	14.19	12	11.10	14	11.45
11	14.56	18	11.54	21	12.66
18	22.16	25	11.52	28	12.74
25	25.01	Sept. 2	11.38	Jan. 4, 1936	13.00
Apr. 1	19.17	8	11.09	11	13.39
8	19.30	15	10.82	15	13.68
15	19.58	22	13.26	18	13.94
22	18.12	29	12.38	25	14.42
29	15.99	Oct. 6	12.86	Feb. 1	14.97
May 6	14.84	14	12.70	8	14.75
13	18.21	20	12.38	15	14.26
20	19.74	27	12.10	22	13.94
27	17.10	Nov. 3	11.76	29	24.43
June 3	16.17	10	11.63	Mar. 7	27.42
10	14.34	17	11.47	14	29.07
17	13.24	24	11.31	21	40.08
24	12.66	Dec. 1	11.32	28	25.82
July 1	12.26	8	12.22	Apr. 4	18.75
8	12.42	15	11.92	11	20.08
16	11.92	22	11.86	18	18.33
22	11.59	29	11.88	25	15.89
Sept. 23	12.00	Jan. 5, 1935	11.80	May 1	14.51
30	12.54	12	12.34	2	14.34
Oct. 7	12.30	19	12.67	9	13.38
14	12.09	26	13.44	16	12.66
21	11.90	Feb. 2	13.49	23	12.36
28	11.74	9	13.32	30	12.12
Nov. 4	11.58	16	13.05	June 6	11.71
11	11.44	23	13.64	13	11.26
18	11.33	Mar. 2	16.01	20	11.15
25	11.24	9	16.95	27	11.36
Dec. 2	11.18	16	16.55	July 4	11.52
9	11.10	23	15.61	11	11.43
16	11.02	30	14.60	18	11.24
23	11.08	Apr. 6	13.47	25	11.04
30	11.13	13	13.49	29	11.20
Jan. 6, 1934	11.57	20	13.42	Aug. 1	11.28
13	16.41	27	13.45	8	11.34
20	15.18	May 4	12.99	15	11.49
27	14.33	11	13.18	22	11.33
Feb. 3	13.51	18	13.27	29	11.79
10	12.91	25	12.88	Sept. 5	12.93
17	12.57	June 1	12.40	12	12.56
24	12.41	8	11.92	15	12.45
Mar. 3	11.68	15	11.55	19	12.31
10	11.56	22	11.41	26	12.00
17	11.71	29	11.25	Oct. 3	11.61
24	11.77	July 7	11.08	10	11.36
31	11.73	13	11.64	17	11.43
Apr. 7	12.41	21	11.49	24	12.21
14	14.12	27	14.48	31	12.06
21	14.28	Aug. 3	13.54	Nov. 7	14.07
28	14.24	10	13.52	10	13.89
May 5	14.06	17	14.52	14	13.54
12	13.19	24	13.74	21	13.22
19	12.63	31	13.30	28	12.95
26	12.01	Sept. 28	12.62	Dec. 5	12.51
June 2	11.37	Oct. 5	12.31	12	13.06
9	10.96	12	11.92	19	13.30
16	10.69	19	11.63	26	14.25
23	11.33	26	11.34	Jan. 2, 1937	14.66

Berks County

114. Owner and observer, Tobias W. Minner. At back porch of owner's residence on north side of Main Street (State Highway 100), Bally, which is second house northeast of side road leading to Dale, Boyertown quadrangle. Altitude about 480 feet. Dug domestic well with wooden hand pump, curbed with stone, depth 27.3 feet, in Hardyston quartzite. In summer well is sometimes used on Friday afternoons, therefore well is measured on Fridays before any withdrawal. No pumped wells nearby. Measuring point, top edge of inner lip of square concrete manhole at chiseled arrow, 1.3 feet above land surface, and 28.87 feet above datum. Water level Sept. 25, 1936, 18.87 feet below measuring point, Measured by visible-ripple method.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 28, 1936	10.78	Oct. 16, 1936	9.91	Dec. 4, 1936	9.45
Sept. 4	11.30	23	9.91	11	9.88
11	10.32	30	9.83	18	10.53
18	10.34	Nov. 6	9.66	24	11.03
25	10.00	13	9.45	Jan. 2, 1937	11.06
Oct. 2	10.12	20	9.43		
9	10.00	27	9.42		

Bradford County

81. Owner, Charlotte Payne. Observer, Leon D. Pepper. In field 0.9 mile southwest of the junction of U. S. Highway 220 and State Highway 414 in Monroeton, between Highway 414 and Susquehanna & New York Railroad, about 40 feet west of first lane to left east of highway bridge across Towanda Creek, Monroeton quadrangle. Observer lives in first house west of bridge on north side of highway. Unused, uncovered dug well, curbed with stone, depth 5.6 feet, in alluvium. No pumped wells nearby. Measuring point, top of brass plate on 2- by 8-inch maple plank, 0.6 foot above land surface, 15.15 feet above datum, and 0.087 foot above benchmark, which is top of head of iron spike about 2 feet above land surface on north side of 9-inch elm tree 40 feet northeast by east from well, just west of the lane. Water level Nov. 28, 1931, 5.15 feet below measuring point. Measured by visible-ripple method with 6-foot folding aluminum engineer's rule.

Sept. 21, 1931	10.31	June 11, 1932	11.32	Aug. 12, 1933	10.10
Nov. 10	9.71	18	11.32	19	10.33
14	9.74	25	11.03	26	12.78
21	9.85	July 2	11.10	Sept. 2	13.21
28	10.00	9	11.37	9	12.81
Dec. 5	10.26	16	10.97	16	13.21
12	10.43	18	10.90	23	13.02
19	10.53	23	10.57	30	12.85
26	11.12	30	10.37	Oct. 7	12.86
Jan. 2, 1932	11.97	Aug. 6	10.29	14	12.69
9	11.77	13	10.17	21	13.21
16	12.88	20	9.98	28	12.95
23	13.15	27	9.77	Nov. 11	12.80
30	12.94	Sept. 3	9.50	18	12.94
Feb. 6	12.89	10	9.27	25	12.84
13	12.98	17	9.25	Dec. 2	12.78
20	12.90	24	(a)	9	12.80
27	12.93	Oct. 1	(a)	16	13.08
Mar. 5	12.96	8	(a)	23	12.98
12	12.94	15	9.69	30	13.42
19	13.30	22	12.57	Jan. 6, 1934	13.37
26	13.40	29	12.45	13	13.37
Apr. 2	13.30	May 27, 1933	12.32	May 4, 1935	12.18
9	13.24	June 3	11.90	11	12.12
16	12.84	10	12.35	18	11.90
23	12.73	17	11.76	June 1	11.69
30	13.02	24	11.02	8	12.07
May 7	13.26	July 1	11.16	15	11.22
14	12.81	15	10.63	22	11.71
21	12.50	22	10.27	29	11.14
28	12.32	29	10.22	July 6	10.58
June 4	11.80	Aug. 5	10.15	13	11.16

Bradford County--Continued

81. Owner, Charlotte Payne.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 20, 1935	10.67	Jan. 11, 1936	12.22	July 25, 1936	10.33
27	10.56	18, 25	(b)	Aug. 1	9.86
Aug. 3	10.48	Feb. 9	11.86	5	9.73
10	10.44	15	12.13	8	10.36
17	10.43	22, 29	(b)	15	10.47
24	10.36	Mar. 7	12.56	22	10.46
31	10.29	14	12.58	29	10.55
Sept. 7	10.16	21	13.13	Sept. 5	10.37
14	10.01	28	12.01	12	10.06
21	10.04	Apr. 4	11.83	19	9.80
28	10.07	11	12.01	26	9.54
Oct. 5	10.00	18	11.77	Oct. 3	(a)
12	10.02	25	11.97	10	(a)
19	10.02	May 2	11.81	17	(a)
26	10.12	7	11.93	24	10.30
Nov. 2	10.58	9	11.79	Nov. 1	10.50
9	10.59	16	11.75	8	11.56
16	12.32	23	11.53	15	11.67
23	12.04	30	11.38	22	11.55
30	11.84	June 6	10.97	29	11.51
Dec. 7	11.88	13	11.27	Dec. 6	11.61
14	12.86	27	10.82	13	12.40
21	12.03	July 4	10.55	20	12.30
28	12.39	11	10.47	27	11.83
Jan. 4, 1936	12.08	18	10.36	Jan. 3, 1937	11.90

82. Owner, C. Holon. Observers, Hiram E. Bull, Nov. 14, 1931, to April 29, 1933; Mrs. M. Ordellia Parks, May 6, 1933, to present time. On hillside in northwest part of East Towanda, about 1,000 feet north-northeast of Lehigh Valley Railroad viaduct over U. S. Highway 6. To reach well, follow lane northeast from viaduct almost to first house, turn sharply to the right on abandoned lane for about 50 to 70 feet, and follow path up steep hill to left to well. Altitude about 820 feet. Unused dug well curbed with brick, depth 64.3 feet, in shale of Chemung formation and/or glacial drift. No pumped wells nearby. Measuring point, top of strap hinge at edge of 1-inch hole in platform beneath float-gage cover, level with land surface, 64.21 feet above datum, 0.35 feet below pointer of gage, 1.38 feet below benchmark, which is top of screw hook 3.5 feet above the land surface on south side of 14-inch maple tree, 50 feet north-northeast of well. Water level Nov. 28, 1931, 54.21 feet below measuring point. Equipped with Kinnison float gage.

Nov. 10, 1931	11.44	Apr. 23, 1932	30.24	Oct. 8, 1932	11.18
14	11.16	30	26.43	15	12.34
21	10.58	May 7	24.65	22	12.74
28	10.00	14	36.11	29	13.02
Dec. 5	9.44	21	32.40	Nov. 5	14.17
12	8.93	28	28.12	12	22.07
19	8.46	June 4	26.33	19	28.12
26	7.95	11	24.03	26	28.86
Jan. 2, 1932	7.56	18	22.31	Dec. 3	25.11
9	7.15	25	21.06	10	23.22
16	6.88	July 2	20.01	17	21.78
23	6.89	9	19.06	24	19.77
30	11.46	16	18.21	31	19.73
Feb. 6	17.21	23	17.38	Jan. 7, 1933	20.75
13	23.08	30	16.60	14	22.04
20	26.05	Aug. 6	15.95	21	23.59
27	23.01	13	15.36	28	28.28
Mar. 5	23.01	20	14.89	Feb. 4	26.83
12	23.32	27	14.31	11	24.48
19	22.59	Sept. 3	13.75	18	24.68
26	29.40	10	13.15	25	26.49
Apr. 2	33.98	17	12.52	Mar. 4	24.90
9	32.70	24	11.91	11	25.20
16	33.45	Oct. 1	11.37	18	27.25

a Dry

b Frozen

Bradford County-- Continued

82. Owner, C. Holon.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 25, 1933	31.44	June 9, 1934	17.79	Dec. 14, 1935	10.17
Apr. 4	31.37	16	17.05	21	19.12
8	33.06	22	16.45	28	18.54
15	34.45	30	15.69	Jan. 4, 1936	17.53
22	34.56	July 7	15.10	11	18.81
29	30.29	14	14.62	22	25.39
May 6	28.53	21	14.09	26	24.52
13	29.18	28	13.56	Feb. 3	22.57
20	26.01	Aug. 4	13.07	9	20.45
27	24.55	11	12.54	10	20.45
June 3	23.13	18	12.00	15	19.10
10	26.96	24	11.51	23	17.83
17	24.22	Sept. 1	11.02	29	22.65
24	22.18	8	10.55	Mar. 7	28.35
July 1	20.85	15	10.08	14	32.27
8	19.79	21	11.30	21	37.82
15	18.90	29	12.08	28	35.17
22	18.10	Oct. 7	13.59	Apr. 4	32.65
Aug. 4	16.73	14	12.85	12	31.97
12	16.68	20	12.03	18	32.33
19	15.59	27	11.19	25	29.71
26	19.15	Nov. 3	10.52	May 2	26.18
Sept. 2	19.70	10	10.15	8	27.37
9	28.69	17	10.08	10	26.85
16	31.17	24	10.21	16	24.53
23	29.48	Dec. 1	14.78	24	22.82
30	26.88	8	24.37	31	21.54
Oct. 7	24.39	Feb. 20, 1935	21.48	June 6	20.43
14	22.16	Apr. 27	29.74	14	19.29
21	20.72	May. 4	28.47	20	18.63
28	20.85	11	34.39	28	17.78
Nov. 4	20.12	18	29.70	July 5	16.96
11	19.69	25	26.29	12	16.40
18	19.35	June 2	23.97	18	16.03
25	18.76	9	22.32	26	15.32
Dec. 2	18.10	15	21.08	Aug. 2	14.74
9	17.51	22	20.10	5	14.40
23	22.59	29	19.22	9	14.13
30	26.50	July 9	18.54	15	13.78
Jan. 6, 1934	27.22	13	18.01	22	13.12
13	30.02	20	17.33	30	12.50
20	27.30	27	16.77	Sept. 6	11.92
27	25.34	Aug. 3	15.66	12	11.42
Feb. 3	23.24	10	15.66	19	10.80
10	21.17	12	15.59	27	10.24
14	19.86	13	14.77	Oct. 3	9.79
18	18.71	17	14.56	11	9.23
Mar. 3	21.73	25	13.80	18	8.73
10	19.18	Sept. 8	12.74	25	8.29
17	17.80	14	11.20	28	8.07
24	17.04	22	11.75	31	7.91
31	27.79	Oct. 5	10.56	Nov. 7	8.56
Apr. 7	28.66	13	10.04	14	13.78
14	32.45	20	9.46	22	13.62
21	31.14	27	9.27	29	12.47
28	27.12	Nov. 3	8.42	Dec. 6	11.34
May 2	24.66	10	8.13	13	10.65
14	22.70	17	8.20	16	11.58
19	21.01	23	9.12	20	12.58
26	19.65	30	10.00	27	16.37
June 2	18.65	Dec. 7	10.13	Jan. 3, 1937	22.77

Centre County

38. Owner, O. V. Scholl. Observer, John I. Scholl. Just west of owner's service station and garage on U. S. Highway 220 just west of easternmost railroad crossing, in Central City (adjacent to Milesburg), Bellefonte quadrangle. Altitude about 700 feet. Unused dug well, curbed with stone below, concrete top, 8.7 feet deep, in alluvial sand and gravel resting on Marcellus shale. Similar well 40 feet west is pumped to supply station. Measuring point, top of inside lip of square concrete manhole, at chisel mark on north side, 1.2 feet above land surface, and 16.60 feet above datum. Water level Nov. 28, 1931, 6.60 feet below measuring point. Measured by visible-ripple method. Well covered by flood waters for 2 days in March, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 22, 1931	10.50	Feb. 25, 1933	11.32	Apr. 22, 1934	11.68
Nov. 21	9.72	Mar. 4	11.25	25	11.37
28	10.00	11	11.58	May 4	11.26
Dec. 5	10.30	25	12.22	12	11.16
12	10.94	Apr. 1	11.62	19	11.14
19	11.04	8	12.10	26	11.22
26	11.04	15	12.10	June 2	11.07
Jan. 2, 1932	11.24	22	11.84	9	11.02
9	11.55	29	11.42	16	11.00
16	11.24	May 6	11.34	23	11.39
23	11.20	13	11.75	30	11.10
30	11.20	20	11.38	July 7	11.10
Feb. 6	11.48	27	11.22	14	11.03
20	11.33	June 3	11.13	21	10.68
29	11.18	10	11.12	28	12.00
Mar. 12	11.23	17	11.09	Aug. 4	11.26
19	11.18	24	10.90	11	11.48
26	11.40	July 1	11.10	18	11.42
April 9	13.67	8	11.12	25	11.32
16	11.65	15	11.05	Sept. 2	11.12
23	11.32	22	10.76	8	11.12
30	11.19	29	11.09	15	11.28
May 7	11.17	Aug. 5	11.08	22	11.42
14	11.97	12	11.12	29	12.25
21	11.34	17	11.27	Oct. 6	11.52
28	11.15	26	11.51	12	11.17
June 4	11.14	Sept. 2	11.38	20	11.07
18	11.07	9	11.40	27	10.90
25	11.03	16	11.61	Nov. 3	11.08
July 2	11.18	23	11.29	10	11.32
9	11.17	30	11.23	17	11.14
16	11.08	Oct. 7	11.22	24	11.86
23	11.09	14	11.10	Dec. 1	12.15
Aug. 6	11.16	21	11.12	8	11.58
13	11.16	28	11.22	15	11.19
20	11.12	Nov. 4	11.09	22	11.12
27	11.00	11	11.15	Jan. 5, 1935	11.17
Sept. 10	10.82	18	11.22	12	11.74
17	10.54	25	11.15	19	11.27
24	10.28	Dec. 2	11.10	26	11.28
Oct. 1	10.15	9	11.12	Feb. 2	11.20
8	11.05	16	11.22	9	11.10
15	11.02	23	11.50	16	11.54
22	11.32	30	11.38	23	11.37
29	11.34	Jan. 6, 1934	12.00	Mar. 2	11.62
Nov. 5	11.38	13	11.56	9	11.62
12	11.68	20	11.32	16	11.68
19	11.32	27	11.22	23	11.52
26	11.52	Feb. 3	11.13	30	11.43
Dec. 3	11.25	10	11.04	Apr. 6	11.25
10	11.12	17	11.10	14	11.78
24	11.33	24	11.12	20	11.38
31	11.59	Mar. 3	11.38	27	11.17
Jan. 7, 1933	11.36	10	11.24	May 4	11.26
14	11.28	17	11.30	18	11.32
21	11.38	24	11.22	25	11.12
28	11.64	31	11.62	June 1	11.02
Feb. 4	11.36	Apr. 7	12.37	8	10.88
18	11.22	14	12.44	15	10.98

Centre County--Continued

38. Owner, O. V. Scholl.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 22, 1935	11.18	Dec. 28, 1935	11.50	July 11, 1936	11.01
29	11.00	Jan. 4, 1936	11.22	20	10.93
July 6	10.96	11	11.30	25	10.54
13	11.08	18	11.32	Aug. 1	10.26
20	11.01	25	11.18	10	10.90
27	11.02	Feb. 1	11.14	15	11.06
Aug. 3	10.94	8	11.02	22	11.00
11	10.92	15	10.78	29	11.22
17	11.00	22	11.00	Sept. 5	11.12
24	10.92	29	12.36	12	10.98
31	10.45	Mar. 7	12.48	19	10.70
Sept. 7	10.58	14	13.38	26	10.42
14	10.32	21	a	Oct. 3	11.20
21	10.35	28	12.28	10	11.16
28	10.20	Apr. 5	12.72	17	11.42
Oct. 5	10.15	11	12.08	24	11.40
13	10.12	18	11.36	31	11.32
19	10.10	25	11.07	Nov. 7	11.48
26	9.98	May 9	11.07	12	11.36
Nov. 2	10.58	23	11.10	21	11.22
9	10.92	30	11.09	28	11.12
16	11.42	June 7	11.05	Dec. 5	11.14
24	11.14	14	11.52	12	11.68
30	11.10	21	11.38	19	11.52
Dec. 7	11.02	27	11.10	26	11.42
14	11.96	July 5	11.12	Jan. 2, 1937	11.68
21	12.04				

a Well covered by flood waters

Chester County

113. Owner, M. P. Dillon, Observer and tenant, Nicholas D. Corbi. Beneath kitchen porch of red-brick farmhouse on northeast side of State Highway 41, about 900 feet northwest of north borough line of Avondale, Coatsville quadrangle. Altitude about 320 feet. Unused dug well beneath concrete floor, depth 49 feet, probably in Cockeysville marble. Hand pump in well is broken. Measuring point, top of concrete floor at opening beside pump base, marked by chiseled arrow, about 2 feet above land surface, and 53.84 feet above datum. Water level Sept. 26, 1936, 45.84 feet below measuring point. Measured by wetted-tape method.

Aug. 27, 1936	11.87	Oct. 10, 1936	10.00	Dec. 5, 1936	9.67
Sept. 5	10.67	24	9.98	12	9.07
12	10.49	Nov. 7	9.97	19	8.83
19	10.03	14	9.79	26	8.80
26	10.00	21	9.74	Jan. 2, 1937	8.87
Oct. 3	9.97	28	9.74		

Clarion County

103. Owner, John G. Meisinger. Observer, W. M. Bolan, chief engineer, Clarion River Power Co. On east side of owner's residence at 614 Wood Street, Clarion, Clarion quadrangle. Altitude about 1,480 feet. Unused dug well, curbed with stone down to depth of 15 feet, remainder open; total depth 27.5 feet, in hard sandstone of the Allegheny formation. No pumped wells nearby. Measuring point, top of inside lip of iron manhole frame, side facing street, level with land surface and 25.84 feet above datum. Water level April 5, 1932, 12.20 feet below measuring point. Measured by visible-ripple method.

Apr. 5, 1932	13.04	May 7, 1932	10.44	June 11, 1932	9.74
11	13.64	14	11.84	18	9.49
16	13.09	21	10.99	25	9.49
23	11.39	28	10.19	July 2	10.69
30	10.84	June 4	9.79	9	12.51

Clarion County--Continued

103. Owner, John G. Meisinger.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 16, 1932	11.14	Nov. 4, 1933	6.99	Feb. 23, 1935	10.94
23	10.04	11	7.29	Mar. 2	12.74
30	9.69	18	9.24	9	13.09
Aug. 6	9.64	25	9.44	16	13.19
14	9.51	Dec. 2	10.14	23	12.64
20	8.74	9	10.49	30	12.19
27	8.36	16	9.94	Apr. 6	10.89
Sept. 3	8.21	23	10.44	13	11.09
10	8.09	30	11.34	20	10.59
17	7.64	Jan. 6, 1934	12.06	27	10.24
24	7.09	13	12.77	May 4	13.29
Oct. 1	7.39	20	11.49	11	13.19
8	8.24	27	11.16	18	12.39
15	8.39	Feb. 3	12.06	25	10.84
22	8.79	10	10.39	June 1	9.69
29	9.24	17	9.84	8	9.94
Nov. 5	10.04	24	9.44	15	9.54
12	11.44	Mar. 3	9.49	22	11.39
19	11.29	10	11.54	29	11.29
26	11.74	17	11.14	July 6	10.44
Dec. 3	10.24	24	11.39	13	9.69
10	9.19	31	13.09	20	9.14
17	8.94	Apr. 7	12.69	27	13.24
24	9.59	14	13.19	Aug. 3	11.94
31	11.49	21	12.29	10	12.89
Jan. 7, 1933	11.49	28	10.94	17	11.59
14	10.39	May 5	10.14	24	10.74
21	10.19	12	10.09	31	9.76
28	11.44	19	10.04	Sept. 7	9.54
Feb. 4	10.69	26	9.69	14	9.39
11	9.79	June 2	9.37	21	8.74
18	10.69	9	9.04	28	8.89
25	11.14	16	9.19	Oct. 5	9.34
Mar. 4	11.99	23	9.89	12	8.67
11	12.39	30	10.09	19	8.19
18	13.54	July 7	9.74	26	8.24
25	13.24	14	9.77	Nov. 2	8.25
Apr. 1	13.64	21	9.64	9	8.75
8	13.59	28	9.24	16	10.16
15	13.19	Aug. 4	9.69	23	10.14
22	13.14	11	10.46	30	9.95
29	11.79	18	10.39	Dec. 7	9.86
May 6	10.72	25	10.29	14	12.01
13	12.64	Sept. 1	9.69	21	12.57
20	12.09	8	9.14	28	11.44
27	11.19	15	8.54	Jan. 4, 1936	10.67
June 3	12.64	22	9.49	11	13.49
10	13.19	29	9.24	18	12.95
17	11.29	Oct. 6	10.39	25	12.26
24	9.94	13	10.24	Feb. 1	10.79
July 1	9.29	20	8.59	8	10.46
8	9.69	27	8.99	15	9.84
15	9.09	Nov. 3	10.54	22	9.87
22	8.59	10	11.84	29	13.57
29	8.44	17	11.94	Mar. 7	12.91
Aug. 5	8.94	24	12.94	14	13.83
12	9.29	Dec. 1	12.09	21	14.19
19	9.24	8	11.26	28	13.99
26	8.94	15	10.42	Apr. 4	13.90
Sept. 2	8.14	22	10.19	11	13.32
9	8.84	29	11.39	18	12.36
16	9.29	Jan. 5, 1935	11.94	25	11.54
23	9.94	12	13.29	May 2	10.84
30	9.89	19	13.04	9	10.47
Oct. 7	9.34	26	13.09	16	10.25
14	8.39	Feb. 2	11.44	23	10.59
21	8.24	9	10.49	30	10.37
28	8.44	16	11.04	June 6	9.24

Clarion County--Continued

103. Owner, John G. Meisinger.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 13, 1936	8.97	Aug. 22, 1936	8.39	Oct. 31, 1936	10.90
20	8.74	29	9.74	Nov. 7	13.79
27	8.60	Sept. 5	10.41	14	12.06
July 4	9.24	12	8.64	21	10.91
11	8.83	19	8.11	28	9.77
18	8.60	26	7.43	Dec. 5	9.55
25	8.75	Oct. 3	7.50	12	11.81
Aug. 1	9.74	10	7.40	19	12.14
8	9.06	17	9.66	26	13.64
15	8.37	24	10.48	Jan. 2, 1937	13.79

Clearfield County

111. Owner, H. M. Meckley. Observer, A. T. Bell. In back porch of abandoned unpainted frame house 0.5 mile southwest of Bower, between New York Central Railroad track and sharp turn in country dirt road, Curwensville quadrangle. Altitude about 1,240 feet. Unused drilled well, diameter .6 inches, depth 30.2 feet, in sandstone of Pottsville formation. Measuring point, sharp edge of casing, south side, 2.2 feet above land surface and 30.43 feet above datum. Water level Sept. 27, 1936, 20.43 feet below measuring point. Measured by wetted-tape method. Replaces well 40, discontinued July 11, 1936.

Aug. 10, 1936	10.56	Oct. 6, 1936	10.15	Nov. 21, 1936	12.32
15	12.20	13	10.31	30	11.99
22	10.29	18	11.67	Dec. 5	10.75
30	10.81	27	11.21	14	12.41
Sept. 6	10.19	Nov. 2	11.54	19	12.62
13	10.27	8	13.45	26	12.83
19	10.17	16	12.28	Jan. 2, 1937	14.02
27	10.00	17	12.18		

Columbia County

75. Owner, Fred E. Walters. Observer, L. Norman Cox. Beneath back porch of yellow frame house, on west side of principal street in Fernville (suburb of Bloomsburg, north of Fishing Creek) $3\frac{1}{2}$ blocks (including alleys) north of old covered bridge over Fishing Creek, Bloomsburg quadrangle. Altitude about 490 feet. Unused dug well, curbed with stone, depth 18.8 feet, in alluvium or glacial outwash. No pumped wells nearby. Measuring point, top of brass plate on back porch, 2.7 feet above land surface, 26.98 feet above datum, and 3.10 feet above benchmark, which is iron lag bolt 0.6 foot above base of 12-inch apple tree just west of well, on side facing well. Water level Nov. 28, 1931, 16.98 feet below measuring point. Measured by visible-ripple method. Hydrograph (as well 971) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Nov. 6, 1931	10.03	Mar. 5, 1932	12.48	July 16, 1932	12.98
7	10.06	12	12.78	23	12.58
14	10.03	19	13.33	30	12.18
21	10.01	26	13.88	Aug. 6	11.98
28	10.00	Apr. 2	14.98	13	13.68
Dec. 5	10.00	9	14.33	20	12.43
12	10.02	16	14.08	27	11.23
19	10.15	23	13.78	Sept. 3	11.03
26	10.28	May 7	13.38	10	10.88
Jan. 2, 1932	10.18	14	13.48	17	10.58
9	11.66	21	13.98	24	10.48
16	11.83	28	13.53	Oct. 1	10.58
23	11.76	June 4	13.28	8	12.48
30	12.43	11	12.98	15	12.68
Feb. 6	12.36	18	13.58	22	12.23
13	13.68	25	13.43	29	12.18
20	13.43	July 2	13.78	Nov. 5	11.90
27	12.78	9	13.43	12	13.48

Columbia County--Continued

75. Owner, Fred E. Walters.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 19	14.18	Apr. 28, 1934	13.95	Oct. 5, 1935	11.08
26	13.78	May 5	13.93	12	11.95
Dec. 3	13.73	12	13.62	19	11.08
10	13.83	19	13.48	26	10.74
17	12.28	26	13.20	Nov. 2	10.99
24	12.58	June 2	12.92	9	11.09
31	13.63	9	12.78	16	13.37
Jan. 7, 1933	14.18	23	12.63	23	13.68
14	13.73	July 7	12.08	30	14.11
21	13.73	14	11.58	Dec. 7	13.70
28	14.08	21	11.48	14	14.41
Feb. 4	13.68	28	11.48	29	13.75
18	13.58	Aug. 4	11.53	Jan. 4, 1936	14.12
25	14.23	11	11.53	11	14.41
Mar. 4	13.78	18	11.38	18	14.30
11	13.78	25	11.43	25	14.06
18	14.43	Sept. 1	11.20	Feb. 1	13.96
25	14.93	8	12.58	8	13.66
Apr. 1	14.33	14	14.80	15	13.55
8	14.38	22	14.38	22	13.57
15	15.31	29	14.68	Mar. 1	15.12
22	14.83	Oct. 6	14.03	7	15.32
29	14.38	20	13.10	14	15.56
May 6	13.98	27	12.88	21	15.62
13	13.98	Nov. 3	13.38	28	15.24
20	13.68	10	13.08	Apr. 4	14.64
27	13.78	17	13.63	11	14.99
June 3	13.56	24	13.92	18	14.44
10	13.58	Dec. 1	17.96	25	14.00
July 1	13.56	8	14.58	May 2	13.76
8	13.58	15	14.15	9	13.54
Aug. 5	12.58	22	13.88	16	13.36
12	12.78	29	13.71	23	13.11
19	12.48	Jan. 12, 1935	14.28	30	12.97
25	14.68	19	13.80	June 6	12.61
Sept. 2	19.63	26	13.68	13	12.35
9	13.78	Feb. 2	13.56	20	12.62
16	16.91	9	13.58	27	12.36
22	14.28	16	14.38	July 4	12.32
30	13.88	Mar. 2	14.81	11	12.05
Oct. 7	13.58	9	14.31	18	11.62
16	13.28	16	14.53	25	11.42
21	13.23	23	14.46	31	11.22
28	13.63	30	14.16	Aug. 1	11.23
Nov. 4	13.43	Apr. 6	14.08	8	10.96
11	13.38	13	14.58	15	11.11
18	13.28	20	14.28	22	11.51
25	13.28	27	14.02	29	13.49
Dec. 5	13.38	May 4	13.78	Sept. 5	12.11
11	12.88	11	13.96	12	11.48
18	12.78	18	13.68	19	11.11
23	13.73	June 1	13.17	26	10.76
31	13.68	8	12.96	Oct. 3	11.04
Jan. 13, 1934	13.28	22	13.58	10	11.00
20	13.90	29	13.36	17	11.03
27	13.78	July 6	12.78	24	11.06
Feb. 3	13.55	13	13.93	31	11.00
10	13.33	20	13.50	Nov. 7	11.03
17	12.98	27	13.28	14	11.08
24	13.68	Aug. 3	13.08	21	11.68
Mar. 4	13.43	10	12.78	28	11.74
10	13.48	17	12.66	Dec. 6	12.34
17	13.28	24	12.33	12	13.20
24	13.18	31	11.93	19	14.16
Apr. 7	14.58	Sept. 7	12.38	26	14.88
14	14.63	21	11.58	Jan. 2, 1937	14.03
21	14.33	28	11.28		

Erie County

1. Owner, Mrs. Grace P. Estes. Observers, Mrs. Estes, Miss Estes, and Clifford R. Estes. North of farm house 0.5 mile east-southeast of Carters Corners, 4 miles north-northwest from middle of Union City, Union City quadrangle. House on west side of dirt road 0.1 mile south of sharp turn. Altitude about 1,440 feet. Unused dug well, curbed with stone, depth 19.3 feet, probably in glacial drift. No pumped wells nearby. Measuring point, top of brass plate on 2-by 8-inch oak beam beneath trapdoor, 0.7 foot above land surface, 25.57 feet above datum, and 0.27 foot above benchmark, which is iron lag bolt 10 inches above base of apple tree, west side, 100 feet south of well. Water level Nov. 29, 1931, 15.57 feet below measuring point. Measured by visible-ripple method. Hydrograph on plate 6 of Pennsylvania Geological Survey Bulletin W3, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 25, 1931	7.18	Dec. 5, 1932	10.70	Jan. 29, 1934	13.41
Nov. 3	7.69	11	10.64	Feb. 4	12.73
15	7.97	18	10.53	12	11.01
22	8.10	25	10.93	18	9.51
29	10.00	Jan. 3, 1933	12.89	Mar. 1	8.31
Dec. 6	10.53	14?	13.71	11	11.51
13	12.16	16	12.48	18	12.11
20	13.26	23	11.99	25	12.91
27	14.06	30	12.32	Apr. 1	12.41
Jan. 3, 1932	13.50	Feb. 6	11.85	8	13.11
10	14.34	12	11.29	14	13.28
17	13.87	20	11.68	22	13.11
24	15.80	27	10.47	29	11.61
31	14.86	Mar. 11	11.51	May 5	12.26
Feb. 7	14.17	18	12.10	14	8.91
14	14.10	25	14.37	21	7.71
21	12.67	27	13.27	27	7.16
28	11.37	Apr. 3	13.88	June 2	6.96
Mar. 6	11.27	9	14.19	9	6.91
13	10.26	18	14.06	16	6.81
20	9.04	24	13.68	23	6.86
27	10.66	May 3	11.56	30	6.77
Apr. 3	13.60	8	9.74	July 7	6.75
10	13.41	16	8.89	14	6.86
17	14.18	22	7.82	21	6.91
24	13.21	June 10	7.68	28	6.51
May 1	11.53	17	7.37	Aug. 5	6.71
8	10.88	July 2	7.21	12	6.56
15	14.28	14	7.11	19	6.51
22	11.99	16	6.94	27	6.81
29	10.58	26	6.83	Sept. 8	a
June 5	9.11	30	6.88	Dec. 1	8.13
12	8.14	Aug. 7	6.85	8	7.53
19	7.54	14	6.86	15	7.06
26	7.30	26	6.80	22	8.08
July 3	7.39	28	6.71	29	9.57
10	7.36	Sept. 5	6.88	Jan. 5, 1935	9.36
17	7.31	11	7.01	12	11.07
24	7.17	18	6.93	19	12.76
Aug. 7	7.31	26	6.95	27	13.61
14	7.45	Oct. 2	7.01	Feb. 2	12.91
22	6.95	9	6.93	9	11.41
28	6.98	16	6.84	16	12.21
Sept. 6	7.25	23	6.82	24	13.53
12	7.05	Nov. 11	7.01	Mar. 2	14.24
19	6.96	13	7.03	9	14.91
26	6.98	20	7.83	16	15.16
Oct. 3	6.97	27	10.16	23	14.64
10	7.18	Dec. 4	11.38	30	13.71
17	7.24	11	12.66	Apr. 6	12.61
24	7.24	18	12.11	13	11.53
31	7.95	24	13.69	20	10.82
Nov. 7	9.66	31	13.51	27	10.21
14	10.33	Jan. 8, 1934	14.80	May 4	8.97
21	10.51	15	13.91	11	8.98
28	10.74	22	12.57	18	11.77

a Dry until Dec. 1

Erie County--Continued

1. Owner, Mrs. Grace P. Estes.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 25, 1935	10.51	Dec. 15, 1935	11.00	June 28, 1936	7.13
June 2	8.91	22	11.41	July 5	7.41
10	7.76	29	12.06	11	7.26
16	7.51	Jan. 4, 1936	12.41	18	7.14
22	8.98	12	12.93	25	7.21
29	7.91	19	13.31	Aug. 8	7.03
July 7	7.46	26	12.03	14	6.89
13	7.85	Feb. 2	10.41	15	6.87
20	7.35	9	11.06	22	6.82
28	9.86	16	8.11	29	6.80
Aug. 5	7.71	23	7.59	Sept. 5	6.78
11	8.05	29	10.31	12	6.73
18	7.68	Mar. 8	10.91	19	6.67
25	7.41	15	11.23	26	6.64
Sept. 1	6.71	22	11.81	Oct. 3	6.57
8	7.21	29	15.08	10	6.52
15	7.62	Apr. 4	14.56	17	6.79
22	7.36	12	15.06	24	6.92
29	7.41	19	14.99	31	7.07
Oct. 6	7.31	26	13.95	Nov. 7	8.07
13	7.31	May 2	12.97	14	7.63
20	7.26	10	11.56	21	7.80
27	7.24	17	10.03	28	8.20
Nov. 3	7.18	24	8.86	Dec. 5	8.30
10	7.23	31	7.93	12	10.77
17	7.17	June 7	7.47	19	10.74
24	7.13	13	7.46	26	10.73
Dec. 1	7.13	21	7.26	Jan. 2, 1937	12.52
8	8.14				

Forest County

30. Owner, E. S. Collins. Observer, Edgar K. Small. In field 0.35 mile northeast of main intersection in Nebraska. To reach well go northeast from Nebraska on State Highway 666 to railroad crossing just beyond first bridge across Tionesta Creek, turn due south on lane for 200 feet, cross fence, and go east 45 feet to well. Altitude about 1,120 feet. Unused drilled well, diameter 6 inches, depth 36 feet, in glacial drift or Pocono formation. No pumped wells nearby. Measuring point, top of casing at chiseled arrow point on west (fence) side, 1.4 feet above land surface and 26.92 feet above datum. Water level, Nov. 29, 1931, 16.92 feet below measuring point. Measured by wetted-tape method. Hydrograph on plate 6 of Pennsylvania Geological Survey Bulletin W3, 1936.

Sept. 29, 1931	9.86	July 2, 1932	10.09	Dec. 11, 1932	10.32
Nov. 14	9.57	10	10.01	18	10.18
22	9.90	17	9.84	Jan. 1, 1933	10.54
29	10.00	24	9.68	8	10.29
Dec. 20	11.20	31	9.60	15	10.37
27	10.46	Aug. 7	9.55	22	11.12
Jan. 24, 1932	12.32	14	9.47	29	10.52
30	12.42	21	9.42	Feb. 5	10.59
Feb. 7	11.72	28	9.33	13	10.64
28	10.82	Sept. 11	9.20	19	10.30
Mar. 7	10.74	24	9.19	26	11.42
27	11.66	27	9.22	Mar. 5	10.51
Apr. 17	11.39	Oct. 5	9.22	12	10.64
May 1	11.10	10	9.57	19	12.09
8	12.50	15	11.20	26	11.67
16	11.76	23	9.20	Apr. 2	12.04
22	10.97	30	9.32	May 6	11.82
29	10.59	Nov. 9	9.62	12	11.36
June 5	10.56	13	9.88	21	13.14
11	10.04	20	11.02	28	11.14
19	10.95	27	9.85	June 7	11.29
26	9.99	Dec. 9	9.72	16	10.69

Forest County--Continued

30. Owner, E. S. Collins.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 19, 1933	10.39	Sept. 9, 1934	8.27	Nov. 9, 1934	9.30
25	10.02	17	8.82	17	9.85
July 6	9.80	23	8.45	30	9.25
9	9.65	30	8.42	Dec. 4	9.35
16	9.51	Oct. 7	8.69	7	9.70
Aug. 1	10.22	14	8.42	20	10.58
6	9.37	23	8.39	23	10.15
17	9.17	28	8.72	Jan. 4, 1936	10.92
24	8.98	Nov. 11	9.75	11	11.02
27	9.05	18	9.55	17	10.40
Sept. 7	8.72	25	10.72	26	10.50
11	8.67	Dec. 2	10.17	31	10.39
23	8.68	9	9.80	Feb. 9	10.42
24	8.68	17	9.99	17	10.30
Oct. 1	8.63	23	9.92	23	10.26
7	8.59	30	10.12	Mar. 4	12.07
10	8.59	Jan. 9, 1935	11.45	8	11.52
22	8.77	13	11.04	15	12.02
Nov. 1	8.75	20	10.02	29	12.90
12	8.87	28	10.12	Apr. 7	11.79
19	9.60	Feb. 3	9.97	12	11.44
30	9.49	10	10.10	19	10.67
Dec. 3	9.68	17	10.50	27	10.44
11	9.80	23	10.04	May 3	10.67
Jan. 7, 1934	11.21	Mar. 6	11.09	17	10.20
14	10.39	9	11.26	22	10.22
21	9.92	17	11.12	29	9.99
29	10.25	28	10.62	June 5	9.47
Feb. 4	10.09	31	10.37	12	9.54
11	10.62	Apr. 7	9.87	19	9.31
18	9.99	13	9.87	26	9.12
25	10.67	21	9.82	July 6	9.12
Mar. 4	10.28	28	9.59	12	8.68
11	9.90	May 5	10.69	17	8.80
18	9.90	16	10.72	28	9.07
25	9.77	21	10.22	29	9.02
31	10.27	26	9.72	Aug. 4	8.85
Apr. 8	11.04	June 2	9.42	10	9.05
15	11.26	9	9.57	14	8.32
22	10.40	16	9.32	21	8.27
30	9.82	23	11.17	28	8.80
May 6	9.69	July 2	9.84	Sept. 4	8.82
17	9.39	7	9.75	11	8.68
20	9.29	14	9.72	18	8.68
26	9.10	21	9.44	25	8.57
June 3	8.82	28	10.97	Oct. 2	8.57
12	8.90	Aug. 4	10.04	10	8.76
20	8.89	16	9.60	23	8.70
24	8.76	18	9.57	Nov. 1	9.38
July 1	8.65	25	9.54	6	10.66
8	8.72	Sept. 2	9.34	16	9.64
15	8.57	8	9.38	20	9.72
22	8.40	17	9.12	Dec. 1	9.93
Aug. 1	8.55	22	9.21	7	10.42
12	8.57	28	9.17	16	10.67
19	8.67	Oct. 13	9.04	28	11.44
26	8.52	20	8.99	Jan. 6, 1937	10.62
Sept. 2	8.47	27	9.15		

Huntingdon County

47. Owner and observer, Fred M. Schell. In back of observer's farmhouse on southwest side of dirt road 0.2 mile due south of the confluence of Great Trough Creek and the Raystown Branch of the Juniata River, just south of Trexler Bridge, 2 miles southeast of Aitch, Huntingdon quadrangle. Altitude about 720 feet. Unused drilled well, diameter 6 inches, depth 41.9 feet, in sandstone of the Chemung formation. Another drilled well 150 feet uphill supplies the farm, yields about 5 gallons a minute. Measuring point, top of casing at chisel mark on opposite side from shed, level with land surface and 36.16 feet above datum. Water level Nov. 28, 1931, 26.16 feet below measuring point. Measured by wetted-tape method.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 16, 1931	11.45	Jan. 21, 1933	13.08	June 9, 1934	11.61
Nov. 20	10.17	28	15.26	16	11.26
28	10.00	Feb. 4	13.68	23	12.38
Dec. 5	10.11	11	12.91	30	12.16
12	11.73	18	12.68	Aug. 4	10.58
19	13.93	25	12.96	18	11.90
26	12.88	Mar. 4	12.57	25	11.84
Jan. 2, 1932	14.47	11	13.38	Sept. 2	11.41
9	16.10	18	20.51	8	11.36
16	13.81	25	17.56	15	12.98
23	13.44	Apr. 1	15.21	22	15.26
30	14.06	8	18.54	29	14.26
Feb. 6	15.84	15	16.51	Oct. 6	14.84
13	14.01	29	13.76	20	12.78
20	13.08	May 6	14.09	27	12.46
Mar. 5	12.59	13	19.46	Nov. 10	12.71
12	12.51	20	16.56	17	12.26
19	12.96	27	14.61	24	12.81
26	15.56	June 3	14.76	Dec. 1	11.46
Apr. 2	19.56	10	13.86	15	13.36
9	15.46	17	13.06	22	13.01
16	14.80	24	12.66	29	13.51
23	13.34	July 8	12.88	Jan. 5, 1935	13.16
30	12.81	15	12.41	12	14.96
May 7	12.60	22	12.08	19	13.83
14	15.65	Aug. 5	11.76	26	14.54
21	13.91	12	11.96	Feb. 2	13.65
28	12.86	Sept. 2	13.22	9	13.06
June 4	12.48	9	14.02	16	13.46
11	12.76	16	14.22	Mar. 2	16.06
18	12.06	23	13.36	9	16.33
25	13.06	Oct. 7	12.48	23	15.56
July 2	12.04	14	12.04	Apr. 6	13.66
16	11.68	21	11.92	13	16.72
23	11.38	28	11.71	20	14.86
30	11.36	Nov. 18	11.31	27	13.51
Aug. 6	11.22	25	10.86	May 4	14.01
13	10.84	Dec. 16	10.70	11	16.01
16	10.88	23	12.51	25	13.51
20	10.96	Jan. 6, 1934	16.61	June 1	12.86
27	10.73	13	16.41	July 7	12.86
Sept. 3	10.61	20	13.86	13	14.66
10	11.31	27	13.26	20	14.44
17	10.16	Feb. 3	12.71	27	15.34
24	9.92	10	12.11	Aug. 3	14.62
Oct. 1	9.91	17	11.83	10	13.79
8	10.31	Mar. 3	12.88	17	13.08
15	10.18	10	12.24	24	12.77
22	12.51	17	11.96	31	12.44
Nov. 5	12.61	24	11.64	Sept. 7	12.83
12	15.56	31	13.81	14	12.41
19	16.38	Apr. 7	14.98	21	12.14
Dec. 3	13.21	14	14.96	30	11.89
10	12.51	21	14.06	Oct. 6	11.52
16	12.06	May 5	12.74	13	11.41
24	13.21	12	12.38	20	10.56
31	14.36	19	12.12	27	10.89
Jan. 7, 1933	13.18	26	11.86	Nov. 2	11.07
14	12.94	June 2	11.61	10	10.89

Huntingdon County--Continued

47. Owner and observer, Fred M. Schell.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 18, 1935	12.36	Apr. 11, 1936	19.09	Aug. 29, 1936	14.91
24	11.18	18	15.21	Sept. 5	13.43
Dec. 1	11.79	25	13.41	12	12.67
8	11.54	May 2	12.92	19	12.21
14	14.80	9	12.67	26	12.06
22	14.47	16	12.67	Oct. 4	12.31
28	13.33	23	12.42	10	12.58
Jan. 4, 1936	15.30	30	12.37	18	16.96
11	15.14	June 6	12.91	25	14.08
18	15.36	13	11.91	31	13.31
25	14.35	20	12.89	Nov. 8	18.43
Feb. 1	13.35	27	12.91	14	15.31
8	12.91	July 4	12.91	21	13.61
15	13.29	11	12.90	28	12.94
22	13.36	18	12.36	Dec. 5	12.66
Mar. 1	21.31	25	12.62	12	15.49
7	21.95	Aug. 2	12.91	19	15.56
14	23.60	8	12.46	26	13.37
21	24.67	15	12.31	31	15.06
28	17.46	22	12.91	Jan. 9, 1937	16.15
Apr. 4	14.89				

49. Owner, John B. Neal. Observers, Clark Neal and Paul Neal. One mile southwest of Center Union, at southeast corner of old stone foundation just south of old barn. To reach well, go north from Huntingdon on State Highway 545 to first bridge across Standing Stone Creek (containing brick gage house), about 0.3 mile north of bridge turn right on lane leading across field to old barn, Allensville quadrangle. Altitude about 660 feet. Unused dug well, curbed with stone, depth 25.9 feet, in shale of Hamilton formation. No pumped wells nearby; small spring about 50 feet northeast. Measuring point, top of steel plate next to float gage, level with land surface to southeast but 4.3 feet above floor of old cellar to northwest, 0.17 foot below pointer on float gage, 22.53 feet above datum, and 3.68 feet below benchmark, which is iron lag bolt 2 feet above base of west side of dead apple tree at head of small spring gully 66 feet east of southeast corner of barn. Water level Nov. 28, 1931, 12.53 feet below measuring point. Measured with Kinnison float gage.

Oct. 13, 1931	11.46	June 4, 1932	15.20	Dec. 16, 1932	11.77
Nov. 21	10.22	11	14.67	23	11.22
28	10.00	18	14.17	31	12.77
Dec. 5	9.86	25	13.67	Jan. 5, 1933	13.77
12	9.78	July 2	13.37	13	12.97
19	12.10	9	13.02	20	12.17
26	12.04	16	12.42	27	14.87
Jan. 2, 1932	12.30	23	12.12	Feb. 4	15.37
9	15.80	Aug. 6	11.32	10	15.02
16	15.81	13	11.12	18	14.57
23	15.34	15	11.00	24	14.82
30	15.24	19	10.72	Mar. 2	15.12
Feb. 6	16.88	26	10.42	10	15.02
13	16.94	Sept. 3	10.17	18	16.92
20	16.61	10	9.84	24	16.87
27	16.20	17	9.70	31	16.82
Mar. 5	16.10	23	9.42	Apr. 7	16.97
12	16.34	Oct. 1	9.26	14	17.02
19	16.16	4	9.14	21	16.92
26	16.90	8	9.12	28	16.67
Apr. 2	16.94	14	8.97	May 6	16.92
9	16.81	22	9.12	13	16.92
16	16.87	28	8.92	19	16.94
23	16.50	Nov. 5	8.92	26	16.90
30	15.98	11	10.87	June 1	16.97
May 7	15.41	18	10.54	9	16.67
14	16.87	25	13.37	17	16.12
21	16.46	Dec. 3	12.74	24	15.77
28	15.87	10	12.17	July 1	15.17

Huntingdon County--Continued

49. Owner, John B. Neal.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 7, 1933	14.80	July 27, 1934	11.07	Dec. 13, 1935	11.57
14	14.32	Aug. 3	10.92	20	15.46
22	14.22	10	10.82	Jan. 3, 1936	14.35
28	14.27	17	10.56	11	14.09
Aug. 4	12.77	Oct. 27	10.84	17	14.78
11	12.62	Nov. 2	10.56	25	13.66
18	12.57	10	10.64	Feb. 1	15.08
25	16.62	16	10.51	15	14.38
Sept. 1	15.77	24	10.83	21	14.96
8	15.07	30	12.28	28	16.49
11	14.82	Dec. 7	15.64	Mar. 6	16.94
17	14.57	15	15.09	13	16.94
22	15.97	21	14.65	20	16.96
28	15.62	28	14.63	27	16.95
Oct. 5	13.07	Jan. 12, 1935	15.11	Apr. 3	16.89
13	12.67	19	15.03	10	16.96
19	12.37	26	15.16	18	16.92
27	11.92	Feb. 2	14.62	24	16.63
Nov. 3	11.57	6	14.27	May 1	16.06
11	11.22	9	13.99	8	15.63
17	10.97	16	13.69	15	15.14
24	10.62	Mar. 1	14.53	22	14.54
30	10.42	26	15.90	25	14.40
Dec. 8	10.12	Apr. 5	15.70	29	14.17
14	9.97	13	15.94	June 5	13.76
21	11.30	20	15.87	12	13.41
28	11.12	27	15.52	19	13.65
Jan. 5, 1934	12.72	May 4	15.10	26	12.26
11	15.82	10	15.96	July 10	12.71
19	15.62	17	15.84	18	12.45
26	15.12	24	15.44	25	12.28
Feb. 3	14.52	June 1	14.85	31	12.00
9	14.22	7	14.05	Aug. 8	11.75
16	13.32	15	12.83	15	11.53
23	12.92	21	13.46	22	11.33
Mar. 3	11.82	28	12.86	29	11.25
9	12.47	July 6	12.36	Sept. 5	11.11
16	12.12	12	12.45	16	10.74
24	11.67	19	12.07	19	10.67
30	13.42	27	11.96	26	10.53
Apr. 6	15.22	Aug. 25	15.62	Oct. 2	11.05
13	13.92	31	15.23	9	10.83
20	16.86	Sept. 7	14.80	16	10.73
27	16.42	14	14.30	23	13.95
May 5	15.62	21	13.84	30	13.83
11	14.80	28	13.35	Nov. 6	16.95
18	14.42	Oct. 5	12.95	12	16.77
25	13.82	12	12.54	13	16.73
June 1	13.37	19	12.08	20	16.22
7	13.12	25	11.73	28	16.43
15	12.47	Nov. 2	11.38	Dec. 4	14.90
21	12.27	9	11.00	11	16.60
28	12.12	16	10.96	18	16.85
July 6	11.62	23	10.83	26	16.77
13	11.52	30	10.74	Jan. 2, 1937	16.91
20	11.17	Dec. 6	10.60		

50. Owner, Mrs. A. Eberly. Observer, Elmer M. Davis. $3\frac{1}{4}$ miles northeast of Petersburg, in front yard of red-brick house. To reach well follow State Highway 305 from Petersburg to bridge across Shaver Creek, turn sharply left on stone road just north of bridge, house is first on right, about 500 feet north of bridge. Well is at north end of old barn foundation. Tyrone quadrangle. Altitude about 720 feet. Unused dug well, curbed with stone, depth 8.8 feet, in soil over shale of Cayuga group. No pumped wells nearby. Measuring point, top of steel plate in middle of wooden cover, 0.5 foot above land surface, 14.91 feet above datum, and 0.46 foot above benchmark, which is top of four brass screws in west root of horse chestnut tree in line with east side of house and 50 feet east of well. Water level Nov. 28, 1931, 4.91 feet below measuring point. Measured by wetted-tape method.

Huntingdon County--Continued

50. Owner, Mrs. A. Eberly.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 13, 1931	10.97	Feb. 25, 1933	13.26	June 16, 1934	11.22
Nov. 20	10.22	Mar. 4	12.11	23	11.24
28	10.00	11	12.87	30	10.94
Dec. 5	9.99	18	13.79	July 7	10.68
12	11.22	25	13.74	14	10.44
19	12.27	Apr. 1	14.04	21	10.21
26	12.13	8	14.09	28	10.04
Jan. 2, 1932	14.07	15	13.67	Aug. 4	9.86
9	13.62	22	13.49	11	9.77
16	11.44	29	13.10	18	9.79
23	12.74	May 6	13.99	25	9.59
30	14.1	13	13.99	Sept. 1	9.44
Feb. 6	13.56	20	13.74	8	9.34
13	13.31	27	13.42	15	9.48
20	12.98	June 3	13.36	22	10.02
27	12.77	10	13.38	29	10.05
Mar. 5	12.84	17	12.97	Oct. 6	12.09
12	12.94	24	12.45	13	11.84
19	13.40	July 1	12.09	20	11.58
26	13.44	8	13.38	27	11.44
Apr. 2	14.24	15	12.89	Nov. 3	11.19
9	13.39	22	12.34	10	11.40
16	13.48	29	12.06	17	11.08
23	13.09	Aug. 5	11.88	24	11.54
30	12.84	12	11.81	Dec. 1	14.04
May 7	12.63	19	12.13	8	13.04
14	13.64	26	12.31	15	12.44
21	13.08	Sept. 2	12.74	22	12.59
28	12.63	9	12.51	29	13.13
June 4	12.34	16	12.31	Jan. 5, 1935	12.99
11	12.05	23	12.08	12	13.68
18	11.95	30	11.92	19	13.28
25	11.92	Oct. 7	11.80	26	13.04
July 2	12.14	14	11.57	Feb. 2	12.63
9	11.92	21	11.42	9	12.53
16	11.52	28	11.29	16	13.55
23	11.41	Nov. 4	10.98	23	13.24
20	11.28	11	10.98	Mar. 2	13.94
Aug. 6	11.02	18	10.96	9	13.50
13	10.74	25	10.71	16	13.67
16	10.45	Dec. 2	10.54	23	13.43
20	10.74	9	10.40	30	13.17
27	10.34	16	10.39	May 18	13.24
Sept. 3	10.19	23	13.19	25	12.76
10	10.18	30	12.89	June 1	12.40
17	9.99	Jan. 6, 1934	14.09	8	12.12
24	9.54	13	13.59	15	11.89
30	9.63	20	12.89	22	12.29
Oct. 8	10.26	27	13.00	29	11.66
15	9.91	Feb. 3	12.60	July 6	11.53
22	10.69	10	12.22	13	11.49
29	10.81	17	11.91	20	11.28
Nov. 5	12.04	24	11.69	27	11.64
12	13.57	Mar. 3	11.59	Aug. 3	12.03
19	14.16	10	12.49	10	12.24
26	13.08	17	13.14	17	13.09
Dec. 3	12.53	24	12.69	24	12.65
10	12.38	31	13.49	31	12.22
16	12.21	Apr. 7	14.13	Sept. 7	12.04
24	12.54	14	13.94	14	11.65
31	13.84	21	13.48	21	11.48
Jan. 7, 1933	13.11	25	13.03	28	11.14
14	13.04	May 5	12.74	Oct. 5	10.93
21	13.14	12	12.44	12	10.71
28	13.79	19	12.16	19	10.49
Feb. 4	13.28	26	11.93	26	10.34
11	13.16	June 2	11.67	Nov. 2	10.51
18	13.28	9	11.36	9	10.44

Huntingdon County--Continued

50. Owner, Mrs. A. Eberly.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 16, 1935	11.74	Apr. 4, 1936	13.54	Aug. 29, 1936	10.73
23	11.34	11	14.06	Sept. 5	10.69
30	11.47	18	13.56	12	10.39
Dec. 7	11.18	25	13.08	19	10.23
14	14.10	May 2	12.83	26	9.93
21	13.22	9	12.59	Oct. 3	10.82
28	12.54	16	12.61	10	10.76
Jan. 4, 1936	12.87	23	12.30	17	12.28
11	13.36	30	12.04	24	12.56
16	13.54	June 6	11.78	31	12.47
18	13.51	14	11.68	Nov. 7	13.83
25	13.27	27	11.49	11	13.13
Feb. 1	12.84	July 4	11.57	14	12.92
8	12.64	11	11.16	21	12.28
15	12.72	18	10.90	28	12.30
22	13.02	25	10.74	Dec. 5	12.24
29	14.16	29	10.09	12	14.34
Mar. 7	14.10	Aug. 1	10.64	19	13.41
14	14.10	8	10.65	26	13.57
21	14.12	15	10.63	Jan. 2, 1937	13.66
28	14.03	22	10.43		

Lackawanna County

101. Owner and observer, Howard I. Stone. At Waverly, beneath back porch of yellow frame house on west side of principal street (State Highway 407), first house south of and across paved side street from the Waverly Community House, a large red-brick structure, Dundaff quadrangle. Altitude about 1,310 feet, unused dug well, curbed with stone, depth 13.9 feet, in glacial drift. No pumped wells nearby. Measuring point, top edge of circular hole in flagstone top, at chisel mark in southeast corner, level with land surface, 16.72 feet above datum and 0.82 foot below benchmark, which is copper nail and washer in root on west side of 10-inch pear tree about 10 feet west of cellar door. Water level Nov. 28, 1931, 6.72 feet below measuring point. Measured by visible-ripple method. Hydrograph (as well 155) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Sept. 15, 1931	10.91	June 4, 1932	13.93	Jan. 14, 1933	14.11
Nov. 9	10.31	11	13.82	21	13.52
14	9.68	18	14.98	28	13.61
21	9.95	25	14.92	Feb. 4	14.35
28	10.00	July 2	13.70	11	14.46
Dec. 5	9.78	9	14.00	18	14.26
12	9.73	16	13.37	25	14.38
20	11.12	23	13.12	Mar. 4	14.19
26	11.22	30	12.92	11	14.29
Jan. 2, 1932	11.12	Aug. 6	12.98	18	14.45
9	11.99	13	12.76	25	14.35
16	11.32	20	12.30	Apr. 1	14.79
23	11.62	27	10.57	8	15.26
30	11.27	Sept. 3	10.94	15	15.48
Feb. 6	13.96	10	10.56	22	15.13
13	14.03	17	9.94	29	14.99
20	13.58	24	9.08	May 6	14.75
27	13.01	Oct. 1	9.03	13	14.54
Mar. 12	11.39	8	11.96	20	14.60
19	12.69	15	11.66	27	14.57
26	13.03	22	11.69	June 3	14.64
Apr. 2	13.93	29	12.01	10	14.70
9	12.28	Nov. 6	14.03	17	14.78
16	11.91	12	13.76	24	14.84
23	11.80	26	13.11	Jan. 27, 1934	14.85
30	12.03	Dec. 10	13.11	Feb. 3	13.97
May 7	13.00	17	12.88	Aug. 3, 1935	13.11
14	13.08	24	12.59	10	12.63
21	12.91	31	14.09	17	12.91
28	12.32	Jan. 7, 1933	14.05	24	12.11

Lackawanna County--Continued

101. Owner and observer, Howard I. Stone.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 31, 1935	11.52	Feb. 8, 1936	12.25	Aug. 2, 1936	9.75
Sept. 7	11.75	15	12.63	8	9.81
14	11.40	23	12.03	15	9.83
21	11.10	Mar. 1	13.95	22	10.2
28	10.90	14	14.0	29	10.35
Oct. 5	10.88	21	a 14.88	Sept. 5	10.13
12	10.30	28	13.30	12	9.78
19	10.02	Apr. 4	13.13	19	9.66
26	9.90	11	14.99	26	9.36
Nov. 5	12.10	18	13.36	Oct. 3	9.31
9	12.91	25	12.46	10	9.73
16	13.39	May 2	12.01	17	9.96
23	13.61	9	12.26	24	9.98
30	14.65	16	13.15	31	10.93
Dec. 7	13.31	23	12.70	Nov. 7	12.79
14	14.54	June 5	11.88	14	12.40
21	13.24	13	11.5	21	12.09
28	13.01	20	12.49	28	11.94
Jan. 4, 1936	13.87	27	11.63	Dec. 5	12.04
11	14.79	July 4	11.01	12	13.28
18	13.48	11	11.11	19	13.08
25	13.78	18	10.71	28	13.30
Feb. 1	13.20	25	10.61	Jan. 2, 1937	12.46

a Well flooded Mar. 17, 18, 19, 1936.

102. Owner and observer, O. J. Ransom. On west slope of Moosic Mountain 1.5 miles southeast of post office at Carbondale. From Carbondale go southeast on Salem Avenue, south on Wayne Street, which continues southeast as macadam road to South Canaan. Ransom's Evergreen Nursery is a quarter of a mile east of first divide crossed. Lane leads north through narrow strip of woods, past tile garage, across open field to small clump of young maple trees on right. Well is 25 feet south of trees and 0.15 mile from Macadam road. Honesdale quadrangle. Altitude about 1,630 feet. Unused dug well, curbed with stone, depth 19.7 feet, covered by large piece of iron. Measuring point, chisel-sharpened edge near center of largest stone forming southwest part of top, level with land surface, 20.23 feet above datum, and 1.76 feet below benchmark, which is iron lag bolt 1 foot above base of northernmost maple tree (5 inches in diameter, August, 1936), 25 feet north of well. Water level Nov. 28, 1931, 10.23 feet below measuring point. Measured by visible-ripple method. Hydrograph (as well 146) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Nov. 8, 1931	10.25	Apr. 30, 1932	13.58	Oct. 22, 1932	13.27
14	10.12	May 7	14.12	29	13.32
21	10.06	14	15.68	Nov. 5	14.23
28	10.00	21	13.98	12	16.88
Dec. 5	10.05	28	13.67	19	16.08
12	10.08	June 4	14.46	28	14.38
19	13.33	11	13.23	Dec. 3	13.48
26	13.48	18	15.15	10	13.17
Jan. 2, 1932	12.63	25	14.51	17	12.37
9	15.23	July 2	13.89	24	12.27
16	15.22	9	15.11	31	14.35
24	17.05	16	13.73	Jan. 7, 1933	14.24
30	16.17	23	12.93	14	14.21
Feb. 6	14.85	30	12.13	21	14.23
13	17.06	Aug. 6	11.68	28	14.45
20	14.73	13	11.08	Feb. 6	14.23
27	13.78	20	10.88	11	14.98
Mar. 5	14.99	27	10.43	18	14.51
12	15.12	Sept. 3	9.92	25	15.51
19	14.24	10	9.53	Mar. 4	14.34
26	15.93	17	9.10	11	15.16
Apr. 2	18.03	24	8.63	19	16.21
9	15.79	Oct. 1	8.46	26	16.23
16	15.64	8	11.42	Apr. 1	18.60
23	14.59	15	11.97	8	17.21

Lackawanna County--Continued

102. Owner and observer, O. J. Ransom.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 15, 1933	17.00	July 21, 1934	10.83	Oct. 19, 1935	10.07
22	16.29	28	10.73	26	9.48
29	14.39	30	15.06	Nov. 2	14.83
May 6	14.13	Aug. 4	14.73	9	15.10
13	14.45	11	13.56	16	16.31
20	13.89	18	12.63	23	16.23
27	13.87	25	11.74	30	17.15
June 3	14.12	Sept. 1	11.73	Dec. 7	14.77
10	15.68	6	11.40	14	16.31
17	13.79	15	12.13	21	15.23
24	12.43	22	14.73	28	13.93
July 1	11.79	29	14.23	Jan. 4, 1936	15.48
8	15.27	Oct. 6	13.88	11	15.48
15	12.20	13	14.58	18	14.7
22	11.32	20	13.08	25	14.6
29	11.00	27	12.25	Feb. 1	13.98
Aug. 5	10.73	Nov. 3	11.73	8	13.33
12	11.34	10	14.59	15	12.63
19	11.34	17	13.83	22	11.84
26	16.93	24	15.23	29	14.07
Sept. 2	14.05	De 8	15.48	Mar. 7	14.21
9	14.23	15	14.71	14	17.85
16	15.83	22	13.73	21	19.06
23	15.23	29	13.21	28	16.48
30	14.15	Jan. 5, 1935	12.23	Apr. 4	15.7
Oct. 7	13.23	12	14.73	11	16.65
14	12.05	19	13.98	18	15.7
21	13.07	26	13.73	25	15.23
28	15.38	Feb. 2	13.48	May 2	14.53
Nov. 4	14.28	9	12.48	16	13.2
11	14.51	16	12.57	23	12.48
18	15.08	23	12.69	30	11.7
25	14.73	Mar. 2	13.62	June 6	11.07
Dec. 2	14.18	9	14.66	13	10.57
9	13.93	16	15.98	20	10.53
16	13.53	23	16.77	27	11.77
23	13.93	30	16.03	July 4	11.48
30	14.83	Apr. 6	14.94	11	10.7
Jan. 6, 1934	14.85	13	18.15	18	10.36
13	15.33	20	16.73	25	9.63
20	14.02	27	15.98	Aug. 1	9.23
27	14.03	May 4	16.23	3	9.33
Feb. 3	12.83	11	15.90	8	8.98
10	11.93	18	15.73	15	9.7
17	11.22	25	13.40	22	10.65
24	10.63	June 1	12.07	29	14.03
Mar. 3	10.30	8	12.13	Sept. 5	15.57
10	11.29	15	12.23	12	12.13
17	11.27	22	13.53	19	11.57
24	11.27	29	13.57	26	10.7
Apr. 7	15.60	July 6	12.57	Oct. 3	10.81
14	16.39	13	15.63	10	10.7
21	16.39	20	14.23	17	10.7
28	14.07	27	14.58	24	12.2
May 5	15.17	Aug. 3	13.78	31	12.93
12	14.43	10	12.56	Nov. 7	12.93
19	13.83	17	11.76	14	14.68
26	12.96	24	10.78	21	14.48
June 2	12.08	31	9.75	28	13.68
9	11.73	Sept. 7	12.10	Dec. 5	12.78
16	11.05	14	12.53	12	15.7
23	12.38	28	11.13	19	15.23
30	11.53	Oct. 5	10.55	26	14.7
July 7	11.73	12	10.23	Jan. 2, 1937	15.93
14	11.23				

Lancaster County

104. Owner, Pennsylvania Water & Power Corporation. Observer, H. W. Lowy. Three-tenths of a mile north-northeast of Safe Harbor, 500 feet east of Conestoga Creek, and 0.9 mile north of mouth of Conestoga Creek, between two old building sites on dirt road, second road east of creek. McCall's Ferry quadrangle. Altitude about 241 feet. Unused dug well, curbed with stone, depth 60 feet, in Vintage dolomite. No pumped wells nearby. Measuring point, top of brass plate on instrument shelf in float-gage shelter, 1.9 feet above land surface, 61.17 feet above datum, and 1.18 feet above benchmark, which is iron lag bolt in south side of double locust tree 50 feet north of well. Water level Nov. 28, 1931, 51.17 feet below measuring point. Measured by Kinnison float gage. Also equipped with Lietz 7-day recorder until Mar. 23, 1935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 23, 1931	9.99	Dec. 24, 1932	12.23	Jan. 27, 1934	17.35
28	10.00	31	12.24	Feb. 3	17.19
Dec. 5	9.98	Jan. 7, 1933	12.22	10	17.00
12	9.95	14	12.22	17	16.93
19	9.90	21	12.24	24	16.82
26	9.86	28	12.31	Mar. 3	16.69
Jan. 2, 1932	9.87	Feb. 4	12.33	10	17.12
7	9.83	11	12.38	17	16.52
16	9.76	18	12.45	24	16.62
23	9.73	25	12.56	31	16.58
30	9.72	Mar. 4	12.66	Apr. 7	16.54
Feb. 6	9.66	11	12.79	14	16.49
13	9.65	18	12.94	21	16.43
20	9.63	25	13.16	28	16.60
23	9.62	Apr. 1	13.35	May 5	16.57
27	9.59	8	13.60	12	16.52
Mar. 5	9.53	15	13.82	19	16.55
12	9.48	22	14.13	26	16.67
19	9.39	29	14.42	June 2	16.83
26	9.33	May 6	14.80	9	16.94
Apr. 2	9.33	13	15.20	16	17.09
9	9.30	20	15.71	23	17.25
16	9.27	27	16.33	30	17.38
23	9.23	June 3	17.10	July 7	17.48
30	9.22	10	17.90	14	17.65
May 7	9.23	18	19.12	21	17.64
14	9.29	24	19.37	28	17.80
21	9.28	July 1	19.62	Aug. 4	17.70
28	9.29	8	20.45	11	17.84
June 4	9.33	15	20.09	18	17.68
11	9.38	22	19.84	25	17.58
18	9.46	29	19.67	Sept. 1	17.35
25	9.55	Aug. 5	21.39	16	17.10
July 2	9.69	12	20.53	22	16.89
9	9.83	19	19.56	29	16.82
16	9.96	26	19.31	Oct. 6	16.70
23	10.07	Sept. 2	18.87	12	16.61
30	10.32	9	18.68	20	16.45
Aug. 6	10.47	16	18.60	27	16.36
13	10.63	23	18.65	Nov. 3	16.26
20	10.79	30	18.50	10	16.23
27	10.93	Oct. 7	18.75	17	16.14
Sept. 3	11.15	16	18.82	24	16.12
10	11.23	21	18.91	Dec. 1	16.20
17	11.35	28	18.94	8	16.18
24	11.49	Nov. 4	18.90	15	16.18
Oct. 1	11.62	11	18.84	22	16.23
8	11.84	18	18.70	29	16.25
15	11.89	25	18.56	Jan. 5, 1935	16.23
22	12.04	Dec. 2	18.43	12	16.25
29	12.07	9	18.30	19	16.29
Nov. 5	12.12	16	18.16	26	16.32
12	12.19	23	18.10	Feb. 2	16.31
19	12.25	30	17.85	9	16.42
26	12.24	Jan. 6, 1934	17.77	16	16.55
Dec. 3	12.24	13	17.62	23	16.57
10	12.23	20	17.53	Mar. 2	16.65

Lancaster County--Continued

104. Owner, Pennsylvania Water & Power Corporation.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 9, 1935	16.75	Apr. 25, 1936	18.27	Sept. 5, 1936	17.17
15	16.92	May 2	18.41	12	17.01
23	17.12	9	18.47	19	16.83
Jan. 4, 1936	15.42	16	18.60	26	16.70
11	15.46	23	18.66	Oct. 3	16.58
18	15.38	30	18.70	10	16.36
25	15.36	June 6	18.70	17	16.20
Feb. 1	15.30	13	18.71	24	16.02
8	15.26	20	18.76	31	15.84
15	15.20	27	18.61	Nov. 7	15.67
22	15.68	July 4	18.47	14	15.53
28	16.74	11	18.41	21	15.40
Mar. 7	16.85	18	18.25	28	15.27
14	16.70	25	18.12	Dec. 5	15.16
21	16.98	Aug. 1	17.92	12	14.98
28	17.42	8	17.73	19	14.85
Apr. 4	17.82	15	17.56	26	14.74
11	17.92	27	17.42	Jan. 2, 1937	14.65
18	17.05	29	17.33		

Luzerne County

76. Owner and observer, Calvin P. Reader. 2.2 miles east-south-east of Wapwallopen. To reach well take macadam road from Wapwallopen toward Hobbie; at about 1.6 miles turn sharply right, and at 0.2 mile southeast of Wapwallopen Creek, turn sharply left; observer's house is 0.1 mile, first house on right (south); well is north of road across from drive to barn. Shickshinny quadrangle. Altitude about 810 feet. Seldom used dug well, curbed with stone, equipped with windlass, depth 29.5 feet, probably in glacial drift. Measuring point, top of brass plate on shelf in windlass frame, 1.5 feet above land surface, 38.98 feet above datum, and 0.30 foot below benchmark, which is copper nail and washer in root on south side of large 2-foot tree on north side of road just east of well. Water level Nov. 28, 1931, 28.98 feet below measuring point. Measured by visible-ripple method. Hydrograph (as well 387) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Nov. 7, 1931	9.90	June 4, 1932	13.75	Jan. 14, 1933	14.42
14	10.07	11	13.56	21	14.46
21	10.00	18	13.59	28	15.64
28	10.00	25	13.46	Feb. 4	14.86
Dec. 5	10.16	July 2	13.53	11	14.55
12	10.33	9	13.52	18	14.61
19	10.70	16	12.23	25	14.98
26	11.28	23	11.42	Mar. 4	14.41
Jan. 2, 1932	12.46	30	11.75	11	14.53
9	16.18	Aug. 6	11.45	18	16.04
16	14.18	13	11.27	25	16.04
23	14.83	20	10.87	Apr. 1	15.20
31	15.41	27	11.01	8	14.95
Feb. 6	14.28	Sept. 3	11.04	15	16.19
14	15.43	10	11.23	22	15.86
21	14.63	17	11.37	29	14.93
27	14.24	24	11.44	May 6	14.53
Mar. 5	14.03	Oct. 1	11.48	13	14.33
12	14.21	8	16.43	20	14.18
19	14.22	15	14.16	27	14.16
26	15.44	22	13.78	June 3	14.05
Apr. 2	17.44	29	14.02	10	14.02
9	15.16	Nov. 5	15.73	17	13.92
16	14.73	12	14.78	24	13.77
23	14.59	19	15.33	July 1	13.74
30	14.15	26	15.08	8	14.01
May 7	14.09	Dec. 3	14.61	15	13.81
14	14.09	10	14.79	22	13.70
21	13.93	24	13.80	29	14.62
28	13.85	Jan. 7, 1933	14.55	Aug. 5	14.16

Luzerne County--Continued

76. Owner and observer, Calvin P. Readler.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 12, 1933	14.18	Oct. 13, 1934	13.78	Dec. 9, 1935	14.68
19	14.06	20	13.11	15	16.73
26	17.51	27	12.58	21	15.23
Sept. 9	15.02	Nov. 3	13.80	Jan. 1, 1936	13.80
16	15.10	10	14.80	5	15.43
23	15.14	17	14.13	12	14.98
30	14.23	24	14.50	20	15.13
Oct. 7	14.16	Dec. 8	15.13	28	14.33
21	13.91	15	14.00	Feb. 3	12.73
28	15.28	22	13.64	9	12.30
Nov. 4	14.53	29	13.83	19	13.00
11	14.30	Jan. 5, 1935	13.90	26	13.68
16	14.18	12	13.98	Mar. 1	15.43
25	14.10	19	13.62	8	15.66
Dec. 2	13.95	26	13.60	18	20.18
16	14.32	Feb. 2	13.84	22	17.21
23	14.01	9	13.94	29	15.40
30	14.01	16	14.18	Apr. 8	15.93
Jan. 13, 1934	15.28	23	13.75	15	15.88
20	14.80	Mar. 2	14.02	23	14.83
27	14.53	9	13.78	29	14.28
Feb. 3	14.10	16	15.44	May 5	14.42
10	14.00	23	15.74	6	14.43
17	13.88	30	14.84	13	13.35
24	13.68	Apr. 6	14.61	18	13.28
Mar. 3	13.87	29	14.23	24	13.66
10	12.53	May 4	14.50	June 1	13.36
17	13.08	11	15.08	8	12.06
24	11.78	18	14.62	14	12.36
31	14.18	25	14.43	21	13.05
Apr. 7	15.82	June 1	13.93	28	13.15
14	15.74	8	14.32	July 5	13.01
21	14.96	15	13.88	11	12.23
28	14.72	29	14.80	19	11.26
May 5	14.48	July 8	13.98	31	10.88
12	14.23	13	15.86	Aug. 5	10.63
19	14.50	20	14.22	19	11.11
26	14.10	29	13.97	26	11.3
June 2	13.68	Aug. 3	14.18	Sept. 5	12.20
9	12.83	12	13.83	12	12.03
23	12.79	19	13.48	19	11.46
30	11.60	26	13.03	28	9.92
July 14	10.81	Sept. 2	12.28	Oct. 5	10.90
21	10.28	11	12.83	12	11.01
28	10.60	16	12.58	20	11.24
Aug. 4	11.88	23	12.13	27	11.58
11	11.88	30	11.56	Nov. 2	11.38
18	11.73	Oct. 10	12.18	17	13.78
25	11.16	14	11.83	23	13.66
Sept. 2	10.32	23	10.98	28	12.86
8	10.26	29	9.96	Dec. 7	14.63
15	11.00	Nov. 4	11.43	15	15.37
22	11.88	11	12.08	21	14.98
29	12.53	25	15.83	28	14.28
Oct. 6	14.42	Dec. 1	16.23	Jan. 4, 1937	14.33

McKean County

108. Owner and Observer, James W. Hubbard. On east side of observer's white frame house at 110 North Street, Smethport, Smethport quadrangle. Altitude about 1,620 feet. Unused drilled well, diameter 6 inches, depth 72.5 feet, in shale of Catskill formation. No pumped wells nearby. Measuring point, top edge of casing on north side tangent to boardwalk, 1.4 feet above land surface and 47.81 feet above datum. Water level Sept. 5, 1935, 36.55 feet below measuring point. Measured by wetted-tape method. No measurements received since Oct. 3, 1936.

McKean County--Continued

108. Owner and observer, James W. Hubbard.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1935	11.26	Jan. 25, 1936	11.25	June 6, 1936	11.23
14	11.28	Feb. 8	11.26	13	11.24
21	11.28	15	11.22	20	11.24
28	11.28	22	11.22	27	11.23
Oct. 5	11.28	29	15.67	July 4	11.23
19	11.27	Mar. 7	16.19	11	11.23
26	11.27	14	15.68	18	11.23
Nov. 2	11.28	21	19.85	Aug. 8	11.24
9	11.28	28	14.97	15	11.23
16	12.05	Apr. 4	13.18	22	11.23
23	11.28	11	14.69	29	11.22
30	11.29	25	11.41	Sept. 5	11.14
Dec. 7	11.29	May 2	11.25	12	11.14
14	12.96	12	11.24	19	11.15
31	11.25	16	11.24	26	11.21
Jan. 4, 1936	11.27	23	11.24	Oct. 3	11.01
11	11.26	30	11.25		

Mercer County

5. Owner, R. E. Hickey. Observers, Charles P. Clarke, Greenville Borough engineer, and his assistant, James Brown. At southwest corner of owner's residence, 12 Clarkesville Street (State Highway 18), Greenville, Shenango quadrangle. Altitude about 1,020 feet. Unused dug well, curbed with stone, depth 15.5 feet, may be in glacial drift. No pumped wells nearby. Measuring point, sharpened top edge of rectangular hole in flagstone top, at chiseled arrow point, level with land surface, 20.89 feet above datum and 0.87 foot below benchmark, which is iron lag bolt in north side and near base of 20-inch apple tree 10 feet west of well. Water level, Nov. 28, 1931, 10.89 feet below measuring point. Measured by visible-ripple method. Hydrograph on plate 6 of Pennsylvania Geological Survey Bulletin W3, 1936.

Nov. 13, 1931	9.92	July 9, 1932	11.89	Mar. 4, 1933	12.85
21	9.82	16	11.39	11	13.17
28	10.00	23	10.99	18	14.56
Dec. 5	10.33	30	10.79	25	14.37
12	10.79	Aug. 6	10.79	Apr. 1	14.35
19	12.43	13	10.46	8	14.35
26	12.73	20	9.84	15	14.73
Jan. 2, 1932	11.06	27	9.87	22	14.50
9	13.98	Sept. 3	9.67	29	13.44
16	13.88	10	9.58	May 6	12.81
23	14.69	17	9.44	13	12.81
30	14.77	24	9.23	20	12.56
Feb. 6	14.31	Oct. 1	9.23	27	13.56
13	14.00	8	8.77	June 3	13.59
20	13.54	15	9.11	10	13.13
27	13.06	22	9.12	17	12.46
Mar. 5	12.48	29	9.37	24	12.74
12	11.81	Nov. 5	9.64	July 1	12.09
19	11.87	12	10.00	8	11.70
26	13.48	19	10.35	15	11.18
Apr. 2	13.68	26	10.79	22	10.76
9	13.77	Dec. 3	10.79	29	10.64
16	14.12	10	9.74	Aug. 5	10.48
23	13.64	17	9.94	12	10.54
30	13.85	24	10.19	19	10.14
May 7	13.56	31	11.08	26	10.27
14	13.96	Jan. 7, 1933	12.02	Sept. 2	9.60
21	13.14	14	11.39	9	9.48
28	12.35	21	11.31	16	9.46
June 4	11.67	28	12.14	23	9.46
11	11.17	Feb. 4	12.19	30	9.42
18	10.94	11	12.35	Oct. 7	9.29
25	10.69	18	12.02	14	9.02
July 2	11.12	25	12.14	21	8.92

Mercer County--Continued

5. Owner, R. E. Hickey.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 28, 1933	9.02	Nov. 10, 1934	9.75	Jan. 4, 1936	12.24
Nov. 4	8.94	Dec. 1	12.05	11	13.26
11	9.09	8	12.04	18	13.44
18	9.44	15	11.23	25	12.51
25	10.10	22	11.42	Feb. 1	11.88
Dec. 2	10.57	29	12.33	8	11.67
9	10.25	Jan. 5, 1935	11.91	16	11.61
16	10.14	12	13.02	22	11.36
23	11.35	19	12.96	29	12.78
30	11.39	26	14.02	Mar. 7	12.91
Jan. 6, 1934	12.77	Feb. 2	12.72	14	13.88
13	13.14	9	12.06	21	14.24
20	12.35	16	12.77	28	15.34
29	12.27	23	13.07	Apr. 4	14.27
Feb. 3	12.60	Mar. 2	13.71	11	14.58
10	11.52	9	13.69	18	14.23
17	11.12	16	14.30	25	13.41
24	10.97	23	14.08	May 2	13.73
Mar. 3	10.86	30	13.50	9	13.14
10	12.21	Apr. 6	12.71	16	12.56
17	12.08	13	12.31	23	12.07
24	12.30	20	12.04	30	11.79
31	12.90	27	11.67	June 6	11.36
Apr. 7	13.48	May 4	11.77	13	11.30
14	13.46	11	12.94	20	11.11
21	13.10	18	9.78	27	10.98
25	12.31	25	11.67	July 4	11.09
May 5	11.71	June 1	11.52	11	11.00
12	11.10	15	11.02	18	10.62
19	10.94	22	11.31	25	10.67
26	10.64	29	11.03	Aug. 1	10.98
June 2	10.37	July 7	10.87	8	10.85
9	10.11	14	10.82	13	11.19
16	9.99	21	10.76	15	10.64
23	9.91	28	11.04	19	11.23
30	9.70	Aug. 3	10.93	31	12.71
July 7	9.50	10	11.19	Sept. 5	12.27
14	9.42	17	11.18	14	11.32
21	9.17	24	11.14	19	11.23
28	8.94	Sept. 7	10.57	26	11.12
Aug. 4	8.97	14	10.54	Oct. 3	11.07
11	9.51	21	10.22	10	11.00
18	9.50	28	10.04	17	11.36
25	9.29	Oct. 19	9.67	24	12.02
Sept. 1	9.13	26	9.80	31	12.28
8	9.01	Nov. 2	9.81	Nov. 7	13.65
15	9.05	9	9.79	14	13.41
22	9.40	16	10.27	21	13.12
29	9.18	23	10.51	28	12.55
Oct. 6	9.75	30	10.68	Dec. 5	12.09
13	9.33	Dec. 7	10.63	12	12.77
20	9.02	14	11.87	19	12.58
27	9.27	21	13.07	26	12.11
Nov. 3	9.35	28	12.21	Jan. 2, 1937	13.73

Northumberland County

57. Owner, J. Simpson Kline. Observer, Charles W. Baylor. Beneath back porch of owner's home and office, 106 Market Street (corner Front Street), Sunbury, Sunbury quadrangle. Altitude about 440 feet. Unused dug well, curbed with brick, depth 21.5 feet, in outwash plain. No known pumped wells nearby. Measuring point, top of steel plate in middle of cover, 0.2 foot above land surface, 30.11 feet above datum,

Northumberland County--continued

57. Owner, J. Simpson Kline.--Continued

and 0.32 foot below benchmark, which is first recess, 1.9 feet above land surface, 1.7 feet north of southwest corner of brick garage (corner nearest to house), 35 feet east of well. Water level Nov. 21, 1931, 20.11 feet below measuring point. Measured by wetted-tape method. Cover destroyed by flood of March 1936, replaced July 30, 1936. Hydrograph (as well 1,057) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 5, 1931	10.00	Jan. 7, 1933	10.71	Mar. 24, 1934	11.09
7	9.98	14	10.75	31	11.44
14	10.10	21	10.46	Apr. 7	11.93
21	10.00	28	10.38	14	12.54
28	10.08	Feb. 4	10.60	21	12.99
Dec. 5	10.02	11	10.44	25	13.18
12	9.89	18	10.53	May 5	12.55
19	10.19	25	10.50	12	12.42
26	10.12	Mar. 4	10.69	19	12.21
Jan. 2, 1932	10.10	11	10.63	26	12.04
9	10.40	18	11.52	June 2	11.95
16	10.53	25	11.40	9	12.21
23	10.45	Apr. 1	11.66	16	12.15
30	10.49	8	11.86	23	11.97
Feb. 6	10.99	15	12.75	30	11.60
13	10.85	22	13.04	July 7	11.41
20	10.51	29	12.49	14	11.27
27	10.95	May 6	12.41	21	11.21
Mar. 5	10.78	13	12.57	28	11.40
12	10.71	20	13.21	Aug. 4	11.00
19	10.63	27	13.44	11	10.87
26	10.58	June 3	13.26	18	11.51
Apr. 2	11.96	10	13.41	25	11.73
9	11.89	17	12.88	Sept. 1	11.47
16	12.60	24	12.16	8	11.05
23	12.69	July 1	12.64	15	10.52
30	12.49	8	12.69	22	11.33
May 7	12.37	15	12.52	29	11.47
14	13.27	Aug. 5	12.09	Oct. 6	11.92
21	12.95	12	12.08	13	11.97
28	12.75	19	12.06	20	11.69
June 4	12.53	26	13.29	27	10.56
11	12.60	Sept. 2	13.15	Nov. 3	10.61
18	12.13	9	12.96	10	11.26
25	12.28	16	13.08	17	11.62
July 2	12.13	23	12.78	24	12.04
9	11.86	30	12.60	Dec. 1	11.86
16	11.95	Oct. 7	13.06	8	12.35
30	11.30	14	12.79	15	12.77
Aug. 6	11.16	21	13.06	22	12.97
13	11.96	28	12.35	29	12.50
20	10.86	Nov. 4	12.28	Jan. 5, 1935	12.47
27	10.74	11	12.26	12	13.01
Sept. 3	10.60	18	12.19	19	12.91
10	10.37	25	12.56	26	12.70
17	10.36	Dec. 2	12.52	Feb. 2	12.46
24	10.24	9	12.49	9	11.97
Oct. 1	10.14	16	12.73	16	11.84
8	10.26	23	12.46	23	12.10
15	10.34	30	12.37	Mar. 2	12.57
22	10.20	Jan. 6, 1934	11.59	9	12.66
29	10.30	13	11.54	16	12.97
Nov. 5	10.49	20	11.47	23	13.26
12	10.66	27	11.44	30	13.46
19	10.97	Feb. 3	11.50	Apr. 6	13.28
26	10.74	10	11.57	13	13.37
Dec. 3	10.78	17	11.56	20	13.44
10	10.83	24	11.21	27	13.28
17	10.88	Mar. 3	11.67	May 4	13.00
24	11.11	10	11.07	11	13.66
31	10.79	17	10.90	18	13.97

Northumberland County--Continued

57. Owner, J. Simpson Kline.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 25, 1935	13.59	Nov. 2, 1935	10.67	Aug. 1, 1936	11.68
June 1	13.06	9	10.63	8	11.67
8	12.87	16	11.15	15	11.61
15	12.49	23	11.37	29	11.21
22	12.24	30	11.48	Sept. 5	11.10
29	12.46	Dec. 7	11.12	12	10.95
July 6	12.32	14	11.29	19	10.83
13	13.42	21	11.48	22	11.34
20	12.98	28	11.24	26	10.71
27	12.63	Jan. 4, 1936	11.11	Oct. 3	10.62
Aug. 3	12.37	11	11.34	10	10.55
10	12.53	18	11.42	17	10.45
17	12.08	25	11.11	24	10.45
24	11.94	Feb. 1	10.97	31	10.43
31	11.86	8	10.86	Nov. 7	11.15
Sept. 7	11.92	15	11.27	14	10.99
14	11.49	22	11.14	28	10.75
21	11.42	29	11.47	Dec. 5	10.60
28	11.40	Mar. 7	11.66	12	10.71
Oct. 5	11.09	14	16.36	19	11.02
12	10.97	28	23.80	26	11.26
19	10.71	July 30	11.90	Jan. 2, 1937	11.43
26	10.74				

Perry County

61. Owner, Miss Bertha Demaree. Observer, A. R. Bortel. In rear of owner's double house at 29 North Third Street, Newport, New Bloomfield quadrangle. Third Street contains railroad tracks. Altitude about 400 feet. Unused dug well, curbed with stone, 19.5 feet deep, in soil over Chemung formation. Measuring point, top of steel plate under float-gage shelter, 0.4 foot above land surface, 0.15 foot below pointer on float gage, 27.05 feet above datum, and 0.55 foot above benchmark, which is iron lag bolt in east side and near base of 12-inch pear tree 25 feet west of well. Water level Nov. 28, 1931, 17.05 feet below measuring point. Measured by Kinnison float gage.

Sept. 12, 1931	11.11	May 7, 1932	12.43	Nov. 26, 1932	14.40
Oct. 9	10.68	14	12.71	Dec. 3	14.07
Nov. 3	10.34	21	13.09	10	13.57
7	10.29	28	13.30	17	13.27
14	10.19	June 4	13.14	24	13.08
21	10.09	11	12.79	Jan. 7, 1933	13.10
28	10.00	18	12.66	14	13.27
Dec. 5	9.92	25	12.61	21	13.08
12	9.85	July 2	12.62	28	13.10
19	9.79	9	12.38	Feb. 4	13.11
26	9.75	16	12.28	11	13.27
Jan. 2, 1932	9.72	23	12.27	18	13.27
9	9.79	30	12.04	25	13.11
16	9.92	Aug. 6	11.10	Mar. 4	13.10
23	10.02	13	11.81	11	13.08
30	10.05	20	11.68	18	13.13
Feb. 6	10.11	27	11.58	25	14.16
13	10.17	Sept. 3	11.42	27	15.13
20	10.21	10	11.09	Apr. 8	15.12
27	10.21	17	11.08	15	16.07
Mar. 5	10.22	24	10.87	22	18.09
12	10.09	Oct. 1	10.87	29	17.07
19	10.39	8	11.17	May 6	16.09
26	10.55	15	11.42	13	17.13
Apr. 2	10.24	22	11.91	20	18.11
9	11.48	29	12.87	27	17.11
16	11.96	Nov. 5	13.05	June 3	16.11
23	12.77	12	13.47	10	15.52
30	12.41	19	14.57	July 1	14.10

Perry County--Continued

61. Owner, Miss Bertha Demaree.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 8, 1933	14.11	Jan. 12, 1935	13.07	Dec. 28, 1935	11.77
15	14.11	19	13.07	Jan. 4, 1936	11.88
Feb. 6, 1934	12.20	26	13.25	16	12.20
10	12.27	Feb. 2	13.17	25	12.63
17	11.95	9	12.99	Feb. 1	12.81
Mar. 3	11.77	16	13.05	8	12.67
10	11.67	23	13.07	15	12.79
17	11.57	Mar. 2	13.37	22	12.77
24	11.50	16	14.67	29	13.17
31	11.57	23	14.87	Mar. 6	14.72
Apr. 7	12.02	30	14.67	14	17.05
14	12.40	Apr. 6	14.42	May 15	14.74
21	11.77	13	15.27	29	13.93
25	10.92	20	15.77	June 5	13.51
May 5	13.37	27	14.85	12	13.25
12	13.57	May 4	14.25	19	13.30
19	13.07	11	14.17	July 3	13.07
26	12.90	18	14.04	10	12.97
June 2	12.67	25	13.67	16	12.81
9	12.57	June 1	13.25	17	11.78
16	12.42	8	12.90	24	12.67
23	12.25	15	12.93	25	12.17
30	12.27	22	12.77	Aug. 1	12.03
July 7	12.27	29	12.61	8	12.34
21	10.87	July 6	12.53	15	11.73
28	11.82	13	13.12	22	11.57
Aug. 4	11.67	20	13.52	29	11.43
12	11.69	Aug. 3	13.23	Sept. 5	11.28
18	11.67	10	12.93	12	11.26
25	11.67	17	12.67	19	11.03
Sept. 2	11.53	24	12.51	26	10.88
8	11.47	31	12.27	30	10.85
15	11.57	Sept. 7	12.07	Oct. 3	10.77
22	11.90	14	11.95	10	11.23
29	12.24	21	11.84	17	11.58
Oct. 6	12.67	28	11.71	24	10.58
20	12.40	Oct. 5	11.52	31	10.53
27	12.27	12	11.42	Nov. 7	10.68
Nov. 3	11.97	19	11.27	14	11.63
10	12.19	26	11.80	16	10.87
17	12.25	Nov. 2	11.03	21	10.70
24	12.19	8	10.92	27	10.57
Dec. 1	12.92	16	11.00	Dec. 5	10.66
8	14.16	23	11.25	12	11.15
14	13.89	30	11.39	19	10.98
22	13.79	Dec. 8	11.45	26	11.18
29	13.81	14	11.52	31	11.39
Jan. 5, 1935	13.07	21	11.65		

110. Owner, I. L. Zeigler. Observer, James H. Troutman. In rear (north) of old brick foundation on north side of State Highway 17, at slight turn in highway, 1.65 miles northeast of public square in Millerstown, Millerstown quadrangle. Owner lives in house on south side of same highway 0.3 mile east of well. Altitude about 460 feet. Seldom used dug well, curbed with stone, equipped with hand pump, depth 12.5 feet, in weathered shale of Cayuga group. Used for an occasional drink by field hands; no pumped wells nearby. Measuring point, top of steel plate on south side of platform, about 1 foot above land surface, 14.82 feet above datum, and 1.87 feet below benchmark, which is iron lag bolt in base of peach tree, south side, 18 feet west of well. Water level Sept. 26, 1936, 4.82 feet above measuring point. Measured by wetted-tape method. Replaces well 60, 1.2 miles northeast, which was discontinued July 18, 1936.

Perry County--Continued

110. Owner, I. L. Zeigler.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1936	11.81	Sept. 19, 1936	10.04	Nov. 14, 1936	11.37
Aug. 1	11.69	26	10.00	21	11.38
8	11.55	Oct. 3	9.62	28	11.34
15	11.56	10	9.33	Dec. 5	11.94
22	11.28	17	11.33	12	11.92
29	11.59	24	10.66	19	11.94
Sept. 5	11.05	31	10.62	26	11.92
13	10.63	Nov. 7	11.85	Jan. 2, 1937	11.97

Potter County

107. Owner, H. B. Walker. Observers, owner and Harold Williams. In rear of old frame house on south side of road just south of post office at Conrad, Short Run quadrangle. Unused dug well, curbed with stone, depth 13.5 feet, in alluvium. No pumped wells nearby. Measuring point, top of brass plate under trap door, 0.4 foot above land surface, 16.82 feet above datum, and 1.19 feet below benchmark, which is iron lag bolt in mud sill at rear of house just beneath north side of window, 2.7 feet below window sill, 30 feet from well. Water level Aug. 31, 1935, 5.30 feet below measuring point. Measured by visible-ripple method.

Aug. 31, 1935	11.52	Feb. 22, 1936	11.27	Aug. 8, 1936	10.80
Sept. 7	11.10	Mar. 1	11.22	15	10.86
14	10.70	7	12.95	22	11.23
21	10.54	14	13.97	29	11.27
28	10.50	21	13.82	Sept. 5	11.26
Oct. 4	10.93	28	13.25	12	11.54
12	10.90	Apr. 4	12.97	19	11.65
18	10.64	11	13.09	26	11.43
26	10.55	21	12.21	Oct. 3	11.27
Nov. 2	11.42	May 2	12.10	10	12.02
9	11.52	9	12.05	17	11.39
16	12.52	16	11.03	24	12.52
23	13.32	23	11.01	31	12.70
30	12.07	30	10.54	Nov. 7	12.62
Dec. 7	12.32	June 6	10.52	14	12.41
14	12.17	13	10.56	21	11.80
21	12.47	20	10.57	28	11.46
28	11.99	27	10.74	Dec. 5	11.84
Jan. 4, 1936	11.72	July 4	10.72	12	12.22
25	11.70	11	10.32	19	12.41
Feb. 1	11.29	18	10.28	26	12.76
8	11.17	Aug. 1	10.40	Jan. 2, 1937	12.77
15	11.13	7	10.82		

Schuylkill County

72. Owner, Nick C. Donofrio. Observers, Miss Lottie Mars, Nov. 7, 1931 to May 15, 1935; thereafter Pennsylvania Power & Light Co. by C. E. Lewis and P. A. Ross, May 15, 1935 to July 18, 1935, by M. L. Grossman since July 25, 1935. On north side of macadam road leading from Pine Grove southeast and east up valley of Little Swatara Creek, 0.4 mile east of bridge over Swatara Creek, at end of short lane on north side opposite side road leading due south, at northeast corner of foundation for old barn. Pine Grove quadrangle. Altitude about 560 feet. Unused dug well, curbed with stone, depth 30.8 feet, in shale (?) of Portage group. No pumped wells nearby. Measuring point, top of brass plate in middle of platform, 0.9 foot above land surface, 35.27 feet above datum, and 2.02 feet below benchmark, which is 20-penny iron spike in base of 18-inch apple tree on east side, 50 feet northwest of well. Water level Nov. 28, 1931, 25.27 feet below measuring point. Measured by wetted-tape method. Hydrograph (as well 913) on plate 4 and figure 3 of Pennsylvania Geological Survey Bulletin W4, 1937.

Schuylkill County--Continued

72. Owner, Nick C. Donofrio.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 21, 1931	11.43	Jan. 28, 1933	20.09	June 9, 1934	16.75
24	11.31	Feb. 4	19.29	16	15.92
31	11.05	11	21.39	23	15.92
Nov. 7	11.19	18	19.06	30	16.19
14	11.05	25	20.44	July 7	14.83
21	11.10	Mar. 4	18.89	14	15.09
28	10.00	11	19.69	21	13.89
Dec. 5	10.13	17	21.19	28	12.96
12	9.97	25	20.97	Aug. 4	12.94
19	9.72	Apr. 1	19.93	11	12.93
26	10.08	8	21.87	18	13.29
Jan. 2, 1932	10.10	15	21.35	25	13.39
9	19.13	22	20.39	Sept. 1	13.19
16	21.13	29	18.62	8	12.79
23	20.12	May 6	17.29	15	12.59
30	20.06	13	21.04	22	15.19
Feb. 6	21.02	20	20.69	29	18.36
13	21.09	27	20.64	Oct. 6	18.33
20	20.18	June 3	19.83	13	18.29
27	18.49	10	18.29	20	17.19
Mar. 5	17.89	17	16.99	27	15.99
12	17.19	24	15.96	Nov. 10	20.29
19	20.45	July 1	14.69	17	18.53
26	20.16	8	19.39	24	17.99
Apr. 2	20.16	15	17.39	Dec. 1	22.39
9	19.84	22	15.29	15	18.93
16	20.19	29	14.99	22	18.59
23	20.08	Aug. 5	14.53	29	20.03
30	18.19	12	14.64	Jan. 5, 1935	19.64
May 7	20.16	17	17.64	12	21.84
14	21.19	26	20.42	19	20.05
21	19.49	Sept. 2	18.29	Feb. 2	19.09
28	20.59	9	19.39	9	18.69
June 4	17.09	16	20.09	16	21.59
11	15.99	22	18.69	Mar. 2	21.19
18	15.39	30	18.69	9	20.03
25	14.89	Oct. 7	16.09	16	21.75
July 2	15.12	14	15.09	23	22.09
9	14.09	21	17.85	30	19.99
12	13.88	28	17.43	Apr. 6	19.53
16	14.13	Nov. 4	17.09	13	21.03
23	14.09	11	17.31	20	19.84
30	12.89	18	17.78	27	19.03
Aug. 6	12.59	25	14.48	May 4	18.09
13	12.29	Dec. 2	14.08	10	17.87
20	11.99	9	14.16	16	18.17
27	11.69	16	14.14	18	17.42
Sept. 3	11.39	23	14.79	25	17.42
10	11.08	30	15.51	29	16.80
17	10.97	Jan. 6, 1934	20.53	June 6	15.96
24	10.49	13	19.99	13	15.66
Oct. 1	10.19	19	18.92	20	15.19
8	13.08	27	20.53	27	14.96
15	13.86	Feb. 3	20.89	July 3	14.54
22	20.29	10	18.99	11	18.36
29	19.59	17	16.99	19	18.03
Nov. 5	20.49	24	17.75	25	16.85
12	20.64	Mar. 17	18.49	Aug. 2	15.52
19	24.79	31	21.52	8	14.74
26	19.82	Apr. 7	20.29	16	13.98
Dec. 3	18.69	14	21.03	22	13.53
10	17.39	21	21.59	29	13.10
17	16.62	25	19.31	Sept. 6	12.80
24	15.81	May 5	19.23	13	12.63
31	21.59	12	18.94	19	12.40
Jan. 7, 1933	19.69	19	18.39	27	12.01
14	18.72	26	18.31	Oct. 3	11.76
21	19.03	June 2	16.53	10	11.47

Schuylkill County--Continued

72. Owner, Nick C. Donofrio.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 17, 1935	11.15	Mar. 19, 1936	23.04	July 30, 1936	12.94
26	10.6	26	21.79	Aug. 6	12.48
31	10.62	Apr. 2	22.56	21	11.82
Nov. 7	10.39	11	22.79	22	11.82
14	10.19	18	21.34	29	11.56
21	10.61	23	20.12	Sept. 5	11.29
29	12.51	30	18.85	19	10.72
Dec. 6	14.85	May 7	17.79	26	10.35
12	15.49	14	17.03	Oct. 3	10.29
19	20.40	22	16.16	10	10.14
26	19.91	28	15.67	17	10.04
Jan. 4, 1936	19.92	29	15.67	24	9.95
10	19.84	June 5	15.05	31	9.74
17	23.05	12	14.64	Nov. 7	9.78
18	23.09	20	15.02	14	9.84
30	20.78	July 2	14.36	21	9.94
Feb. 6	19.76	10	13.85	28	9.91
27	22.36	17	13.53	Jan. 2, 1937	19.23
Mar. 12	23.22				

Somerset County

16. Owner, N. B. Sanner. Observers, N. B. Sanner, Nov. 16, 1931 to Sept. 1932; R. E. Carpenter, Sept. 1932 to present time. In back of first house on north side of road east of Casselman River bridge at Markleton, Meyersdale quadrangle. Altitude about 1,680 feet. Unused dug well, diameter 18 inches, cased with tile, depth 18.8 feet, in soil over Allegheny formation. No pumped wells nearby. Measuring point, under trap door inside bell of tile casing at chisel mark on north side, level with land surface, 25.80 feet above datum and 2.07 feet below benchmark, which is iron lag bolt about 10 inches above base on west side of 10-inch cherry tree next to alley 18 feet east of well. Water level Nov. 28, 1931, 15.80 feet below measuring point. Measured by visible-ripple method.

Oct. 12, 1931	10.52	June 18, 1932	10.40	Jan. 28, 1933	11.16
Nov. 16	10.03	25	10.27	Feb. 4	10.98
21	10.00	July 2	10.08	11	11.10
28	10.00	9	10.04	18	11.15
Dec. 5	10.62	16	9.98	25	11.42
12	11.30	23	10.10	Mar. 4	11.18
19	11.27	30	10.34	11	11.20
26	11.48	Aug. 6	10.26	18	12.18
Jan. 2, 1932	11.74	13	10.05	25	12.42
9	11.83	20	10.06	Apr. 1	12.66
16	11.35	27	9.82	8	13.03
23	11.47	Sept. 3	9.78	15	12.62
30	12.30	10	9.54	22	12.99
Feb. 6	12.20	17	9.36	29	12.47
13	11.93	24	9.11	May 6	13.73
20	11.64	Oct. 1	9.10	13	13.79
27	11.44	8	9.08	20	13.14
Mar. 5	11.12	15	9.12	27	12.55
12	11.13	22	9.30	June 3	12.35
19	11.69	29	9.49	10	12.23
26	11.83	Nov. 5	9.50	17	12.72
Apr. 2	13.38	12	9.73	24	10.78
9	12.23	19	10.70	July 1	10.83
16	12.29	26	9.98	8	10.64
23	11.75	Dec. 3	10.06	15	10.45
30	11.45	10	9.85	22	10.20
May 7	11.23	17	9.82	29	10.06
14	12.56	24	10.46	Aug. 5	9.92
21	12.00	31	10.63	12	9.87
28	11.46	Jan. 7, 1933	10.70	19	9.71
June 4	10.99	14	10.64	26	9.76
11	10.55	21	10.74	Sept. 2	9.98

Somerset County--Continued

16. Owner, N. B. Sanner.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1933	10.06	Oct. 27, 1934	10.14	Dec. 14, 1935	11.33
16	10.02	Nov. 3	10.33	21	11.08
23	9.92	10	10.56	28	10.94
30	9.77	17	10.62	Jan. 4, 1936	11.46
Oct. 7	9.76	24	10.99	11	11.64
14	9.55	Dec. 1	11.10	18	11.70
21	9.55	8	11.16	25	11.58
28	9.74	15	10.76	Feb. 1	11.19
Nov. 4	9.30	22	10.86	8	11.17
11	9.53	29	11.10	15	11.46
18	10.22	Jan. 5, 1935	11.15	22	11.48
25	9.86	12	11.40	29	11.15
Dec. 2	9.86	19	11.64	Mar. 7	12.26
9	9.95	26	11.95	14	12.18
16	10.88	Feb. 2	11.62	21	14.25
23	10.78	9	11.46	28	13.82
30	10.79	16	11.73	Apr. 4	12.95
Jan. 6, 1934	11.40	23	11.66	11	13.77
13	11.76	Mar. 2	11.78	18	12.60
20	11.41	9	11.72	25	12.05
27	11.56	16	11.82	30	11.67
Feb. 3	11.15	23	12.41	May 2	11.75
10	10.83	30	12.06	9	10.17
17	11.15	Apr. 6	11.76	16	11.02
24	10.47	13	12.52	23	10.74
Mar. 3	10.51	20	12.32	30	10.69
10	10.98	27	11.93	June 6	10.50
17	11.08	May 4	12.06	13	10.65
24	10.92	11	13.01	20	10.54
31	11.30	18	12.58	27	10.37
Apr. 7	11.90	25	12.06	July 4	10.70
14	12.13	June 1	11.62	11	10.12
21	11.83	8	11.35	18	10.58
28	11.42	15	11.18	25	9.80
May 5	11.32	22	11.20	Aug. 1	10.00
12	11.02	29	10.94	8	10.12
19	11.12	July 6	10.85	15	10.11
26	10.87	13	10.80	19	10.02
June 2	10.69	20	10.55	22	10.02
9	10.55	27	10.85	29	11.71
16	10.40	Aug. 3	12.12	Sept. 5	10.60
23	10.61	10	11.76	12	10.42
30	10.41	17	11.72	19	10.43
July 7	10.26	24	11.29	26	10.25
14	10.41	31	11.20	Oct. 3	9.33
21	10.34	Sept. 7	11.34	10	10.43
28	10.22	14	11.04	17	11.54
Aug. 4	10.22	21	10.84	24	10.77
11	10.43	28	10.62	31	11.05
18	11.18	Oct. 5	10.66	Nov. 7	11.58
25	11.02	12	10.17	14	11.61
Sept. 1	10.74	19	10.10	21	11.78
8	10.52	26	9.90	28	12.02
15	10.48	Nov. 2	9.94	Dec. 5	10.92
22	10.35	9	10.05	12	11.60
29	10.52	16	10.16	19	11.40
Oct. 6	10.63	23	10.10	26	11.30
13	10.45	30	10.34	Jan. 2, 1937	12.20
20	10.16	Dec. 7	10.87		

Sullivan County

105. Owner and observer, Carl D. Molyneux. Between owner's white frame house and yellow frame house to north, on north side of State Highway 87, $\frac{1}{4}$ mile southwest of Millview, Barclay quadrangle. Unused dug well, curbed with stone, depth 27.5 feet, in glacial sand and gravel. Nearest pumped well at yellow house. Measuring point, chiseled edge of flagstone cover at opening on southwest side, level with land surface, 35.57 feet above datum, and 2.324 feet below benchmark, which is iron lag bolt 1 foot above base on south side of 10-inch ash tree 20 feet northwest of well. Water level Aug. 8, 1935, 24.27 feet below measuring point. Measured by wetted-tape method. Well dry Aug. 31 to Nov. 9, 1935, and June 13 to Oct. 31, 1936, inclusive.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 8, 1935	11.30	Jan. 18, 1936	10.61	Apr. 25, 1936	8.81
10	10.70	25	9.84	May 30	8.78
17	8.72	Feb. 1	8.80	June 6	9.03
24	8.59	8	8.74		b
	a	15	8.61	Nov. 7	11.84
Nov. 16	11.74	22	8.86	14	9.59
23	10.75	Mar. 2	14.31	21	8.85
Dec. 2	10.59	7	13.80	28	8.48
7	9.38	16	16.59	Dec. 5	9.01
16	14.05	21	16.02	12	11.99
21	10.63	28	11.09	19	11.86
28	8.80	Apr. 4	10.48	26	11.15
Jan. 4, 1936	12.05	11	12.58	Jan. 4, 1937	10.83
11	11.55	18	10.79		

a Dry Aug. 31 - Nov. 9, inclusive.

b Dry June 13 - Oct. 31, inclusive.

Susquehanna County

100. Description of well and water-level measurements from Apr. 15, 1930 to Jan. 4, 1936, in Water Supply Paper 777, pages 167-169. The following changes made Aug. 4, 1936. New measuring point is at same altitude as old measuring point and is top of brass plate tangent to the 3-inch hole in instrument shelf, 1.1 feet above land surface and 1.15 feet above new benchmark, which is chiseled cross on concrete well-platform 2.1 feet south of northeast corner and 0.2 foot west of east edge. Water levels given below were measured by wetted-tape method except those taken from recorder charts, which are indicated by a foot note. Hydrograph (as well 17) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Jan. 4, 1936	14.75	Apr. 13, 1936 a	16.59	Aug. 29, 1936	10.22
11	14.21	18	15.74	Sept. 5	10.29
18	14.05	25	14.99	12	10.24
25	13.68	May 2	14.15	19	10.19
Feb. 1	13.14	9	13.25	26	10.09
8	12.59	16	12.40	Oct. 3	10.00
15	12.13	23	11.89	10	9.94
22	11.65	30	11.60	17	9.90
25	a 11.52	June 6	11.58	24	9.88
29	13.37	13	11.15	31	9.96
Mar. 7	14.11	20	11.03	Nov. 7	10.43
11	a 18.22	27	10.84	14	10.80
14	16.47	July 11	10.71	21	11.16
15	a 16.38	18	10.62	28	11.35
18	a 18.39	25	10.49	Dec. 5	11.27
21	16.93	Aug. 8	10.55	12	12.62
28	15.64	10	10.35	19	14.52
Apr. 2	a 15.45	15	10.29	26	14.17
4	15.79	22	10.19	Jan. 2, 1937	14.58
11	15.78				

a From recorder chart.

Tioga County

106. Owner and observer, L. R. Kohler. In small outbuilding in rear of owner's white frame house at northwest corner of intersection between U. S. Highway 6 and State Highway 349 at Gaines, Gaines quadrangle. Altitude about 1,290 feet. Unused dug well, curbed with stone, equipped with windlass, depth 23.4 feet, in glacial outwash. No pumped wells nearby. Measuring point, top of brass plate on corner of windlass frame nearest to door, 3.08 feet above floor, 3.8 feet above land surface, 30.19 feet above datum, and 3.807 feet above benchmark, which is point on concrete foundation for cellar steps 0.7 foot east of west inside end and 0.5 foot north of south or house edge, marked with blue crayon. Water level Aug. 20, 1935, 17.47 feet below measuring point. Measured by wetted-tape method.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 20, 1935	12.72	Feb. 8, 1936	11.05	Aug. 1, 1936	9.22
24	11.98	15	10.55	6	11.34
31	10.99	22	9.91	8	13.44
Sept. 7	10.17	29	11.21	15	13.33
14	9.41	Mar. 7	17.45	22	12.81
21	9.01	14	21.11	27	14.01
28	8.64	21	21.74	Sept. 5	13.13
Oct. 5	8.34	28	20.41	12	12.27
12	8.74	Apr. 4	19.31	19	11.37
19	8.39	11	19.05	26	10.37
26	8.11	18	18.53	Oct. 3	9.94
Nov. 2	9.94	May 2	18.35	10	9.06
9	9.82	9	14.11	17	10.15
16	12.04	16	13.45	24	12.67
23	11.65	23	12.94	31	13.39
30	11.41	30	13.37	Nov. 7	19.65
Dec. 7	10.53	June 6	12.61	14	17.77
14	10.85	13	11.21	21	15.56
21	16.41	20	10.91	28	14.02
28	14.51	27	10.15	Dec. 5	12.26
Jan. 4, 1936	13.68	July 4	10.35	12	12.54
11	12.50	11	9.82	19	15.65
18	13.32	18	9.61	26	16.72
25	12.61	25	9.47	Jan. 2, 1937	19.05
Feb. 1	12.01				

Washington County

112. Owner, Mrs. J. B. Luellen. Observer, John C. Ullom. On east side of U. S. Highway 19, at southeast corner of third old masonry foundation south of grocery store at dirt road leading east, at Amity, Amity quadrangle. Altitude about 1,190 feet. Unused dug well, curbed with stone to depth of 4.5 feet, uncased bedrock below, total depth 36.1 feet, in Washington formation. Measuring point, top of brass plate under trap door, 0.7 foot above land surface, 44.63 feet above datum, and 0.275 foot above benchmark, which is iron lag bolt on west side of 20-inch pear tree 10 inches above base, 70 feet south of well, in rear of neighbor's house. Water level Sept. 26, 1936, 34.63 feet below measuring point. Measured by visible-ripple method.

Aug. 17, 1936	10.02	Oct. 3, 1936	9.99	Nov. 21, 1936	21.72
22	10.01	10	10.10	28	21.47
29	10.20	17	9.99	Dec. 5	21.23
Sept. 5	9.99	24	9.89	12	24.40
12	9.99	31	9.99	19	24.60
19	10.00	Nov. 7	19.37	26	27.62
26	10.00	14	21.40	Jan. 2, 1937	28.72

Wayne County

83. Owners, F. C. and A. H. Tyce. Observer, F. C. Tyce. At rear of white frame house occupied by A. H. Tyce on northeast side of U. S. Highway 6, 0.2 mile northwest of northwest borough line of Hawley, Hawley quadrangle. Altitude about 920 feet. Unused dug well, curbed with stone, depth 17.1 feet, in glacial outwash. No pumped wells nearby. Measuring point, sharp edge of round hole in flagstone cover at chiseled arrow point at north corner, level with land surface, 26.36 feet above datum, and 1.18 feet above benchmark, which is top of corner nearest to house, of northeast concrete headwall of culvert under highway just southeast of house. Water level Nov. 27, 1931, 16.36 feet below measuring point. Measured by visible-ripple method. Hydrograph (as well 115) on plate 4, Pennsylvania Geological Survey Bulletin W4, 1937.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1931	10.81	Oct. 29, 1932	11.14	Dec. 16, 1933	14.01
24	11.06	Nov. 5	11.91	23	14.67
30	11.07	12	13.16	28	15.22
Oct. 9	10.37	19	14.62	Jan. 6, 1934	17.41
16	10.30	26	15.93	13	17.81
23	10.16	Dec. 3	15.25	20	17.02
30	10.35	10	14.86	27	16.83
Nov. 6	9.81	17	15.22	Feb. 3	15.42
13	9.83	24	15.05	10	15.64
21	9.90	31	14.32	17	15.33
27	10.00	Jan. 7, 1933	14.05	24	14.85
Dec. 5	9.83	14	14.19	Mar. 3	14.75
12	10.15	21	14.37	10	14.85
19	10.35	28	14.63	17	14.63
25	10.33	Feb. 4	14.62	24	14.33
Jan. 1, 1932	10.60	11	14.58	31	14.84
8	10.72	18	14.45	Apr. 7	17.39
16	10.60	25	15.42	14	18.31
23	11.70	Mar. 4	15.62	21	18.31
30	11.56	11	16.43	28	17.39
Feb. 6	11.09	18	16.27	May 5	17.39
13	12.77	25	20.07	12	16.75
20	11.86	Apr. 1	19.09	19	16.29
27	11.69	8	15.83	26	15.89
Mar. 5	11.88	15	19.72	June 2	15.62
12	11.89	22	18.93	9	15.22
19	11.94	29	17.62	16	14.79
26	12.97	May 6	16.92	23	14.71
Apr. 2	18.64	13	16.42	30	14.25
9	17.89	20	16.06	July 7	13.85
16	17.36	27	15.75	14	13.02
23	16.65	June 3	15.44	21	12.47
30	16.01	10	14.37	28	12.77
May 7	16.35	17	14.79	Aug. 4	12.43
14	16.60	24	14.33	11	12.01
21	15.86	July 1	13.86	18	11.68
28	15.45	8	13.56	25	11.60
June 4	15.81	15	13.38	Sept. 1	11.35
11	15.27	22	12.47	8	12.13
18	16.37	29	12.33	15	12.68
25	14.95	Aug. 5	12.01	22	12.65
July 2	15.47	12	11.75	29	13.40
9	15.03	19	11.52	Oct. 7	13.58
16	14.64	25	19.09	14	13.54
23	14.03	Sept. 2	16.51	21	13.17
30	13.56	9	15.65	28	13.08
Aug. 6	13.02	16	15.82	Nov. 3	12.66
13	12.48	23	16.81	16	12.83
20	12.06	30	16.02	24	12.43
27	11.68	Oct. 7	14.82	Dec. 1	14.51
Sept. 3	11.37	14	14.78	8	14.93
10	11.10	21	14.47	15	15.08
17	11.02	Nov. 4	14.80	22	14.73
24	10.77	11	14.65	29	14.68
Oct. 1	10.66	18	15.52	Jan. 5, 1935	13.82
8	11.66	25	14.40	12	15.01
15	11.10	* Dec. 2	14.17	19	15.07
22	11.12	9	14.11	Feb. 2	15.04

Wayne County--Continued

83. Owners, F. C. and A. H. Tyce.--Continued

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 9, 1935	14.83	Oct. 19, 1935	11.02	May 30, 1936	15.45
16	14.79	26	11.02	June 6	14.95
23	14.90	Nov. 2	12.08	13	14.46
Mar. 2	15.14	9	12.57	20	14.72
9	16.47	16	13.10	27	14.55
16	18.56	23	14.08	July 4	14.09
23	18.90	30	13.67	11	13.64
30	18.26	Dec. 7	13.53	18	12.48
Apr. 6	17.56	14	13.68	25	11.82
13	18.92	21	13.58	Aug. 1	11.58
20	18.23	28	13.10	3	11.58
27	17.57	Jan. 4, 1936	13.43	8	11.43
May 4	17.06	11	13.11	15	11.25
11	17.59	18	13.90	22	11.39
18	17.00	25	13.82	29	11.37
25	16.37	Feb. 1	13.50	Sept. 5	11.05
June 1	16.00	8	13.48	12	10.95
8	15.67	15	13.20	19	10.84
15	15.48	22	13.24	26	10.53
22	15.67	29	14.27	Oct. 3	10.73
29	15.39	Mar. 7	14.60	10	10.59
July 7	14.90	14	22.58	17	10.62
14	17.56	21	23.25	24	10.63
21	16.38	28	22.16	31	10.62
28	15.93	Apr. 4	20.06	Nov. 7	11.31
Aug. 3	15.40	11	20.30	14	10.91
10	14.88	18	18.91	21	10.64
17	14.43	25	17.92	28	10.52
24	14.05	May 2	17.31	Dec. 5	10.54
Sept. 14	12.43	6	17.10	12	11.78
Oct. 5	11.48	9	16.72	26	11.48
12	11.26	16	16.27	Jan. 2, 1937	11.93

SOUTH CAROLINA

TIGER RIVER AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel and J. M. Terry

The observation well program in the Tiger River area ^{1/} in Spartanburg and Greenville Counties, S. C., was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service, T. S. Buie, project manager. Water-level measurements were made about weekly in 26 wells during the year by members of the Geological Survey and the Soil Conservation Service. A water-stage recorder was operated continuously on well 3, and two other recorders were operated on other wells for short periods. Approximately 1,300 measurements were made during the year ending December 31, 1936.

The numbers of the wells in the North Tiger area as given in Water-Supply Paper 777 have been changed; thus in the present report wells 1 to 9 are numbered 31 to 39 respectively. Wells 14 to 19 are in Greenville County, the others are in Spartanburg County.

Some water is withdrawn at times from wells 10, 17, 18, 31 and 32, hence the water-level measurements for these wells were not used in computing the average water levels, but the measurements are given in this report. Well 11, for which water-level measurements are given in Water-Supply Paper 777, was destroyed to make way for a new road. The average water levels given in the present report do not correspond to those given in Water-Supply Paper 777, because wells 10, 11, 31, and 32 have been excluded from the list of wells used in computing the new average, and well 19 has been added to the list. The average water levels for the entire period of record are given in this report and were obtained by averaging the water levels in 20 wells, numbered 1, 2, 3, 4, 6, 7, 8, 9, 12, 14, 15, 16, 19, 33, 34, 35, 36, 37, 38, and 39.

The average fluctuations of the water levels in the North Tiger and South Tiger areas are practically the same in amplitude and essentially synchronous in phase, but the fluctuations in some of the individual wells, especially in the South Tiger area, deviate appreciably from the average. Thus the times of the highest and lowest stages in some of the

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 170-173, 1936.

wells varied as much as several months from the highest and lowest average stages. In most of the wells the water levels rose from the beginning of June 1934, when the first measurements were made, until about the end of July and then declined an average of more than 1 foot by January 1, 1935. The water levels rose an average of about 1 to 4 feet from January 1 until about May 20, 1935. They remained practically at the same stage until about July 1 and then declined about 1.4 feet by December 23, at which time the average water level stood only 0.10 foot higher than on January 1, 1935.

On January 6, 1936, the water levels stood an average of about 0.8 foot higher than on December 23, 1935. The water levels rose steadily until May 18, at which time they reached the highest average stage during the period of record--3.96 feet higher than on January 6, 1936, and 4.88 feet higher than the lowest average stage of record on January 1, 1935. They declined an average of about 2.0 feet between May 18 and October 5 and then rose about 0.1 foot by December 28. They rose an average of about 0.3 foot during the week following December 28.

On December 28, 1936, the average water level stood 2.0 feet higher than on January 6, 1936; about 3.0 feet higher than on January 1, 1935; and about 1.8 feet higher than on July 1, 1934.

Wells in the Tiger River area, in Spartanburg
and Greenville Counties, S. C.

(The depth to the water level given in the next to last column is the depth below the measuring point on Jan. 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
1	C. O. Fowler, $4\frac{3}{4}$ miles N. 56° E. of Woodruff.	65+	6	64.90	74.90
2	C. O. Fowler, $2\frac{1}{2}$ miles N. 73° E. of Woodruff.	35.5	14	33.65	43.65
3	C. D. Turner, $\frac{1}{4}$ mile S. 45° E. of Switzer.	....	14	32.18	42.18
4	Walter Cox, $\frac{1}{8}$ mile N. 30° W. of Switzer.	....	12	39.39	49.39
6	J. D. Darby, $3\frac{1}{2}$ miles S. 25° E. of Reidville.	51	60	47.42	57.42
7	T. O. Fowler, $2\frac{1}{2}$ miles S. 21° E. of Reidville.	15	6	15.25	25.25
8	C. S. Vaughn, $3\frac{1}{2}$ miles N. 82° E. of Reidville.	37	60	35.47	45.47
9	Mrs. Ila L. Wilson, 1 mile N. 26° W. of Reidville.	29	60	30.68	40.68
10	J. E. Raven, $1\frac{1}{4}$ miles S. 45° E. of Duncan.	27	60	26.68	36.68
12	J. G. R. Armstrong, 2 miles N. 50° W. of Duncan.	37	60	35.79	45.79

a 36.36 feet to July 13, 1936; 40.13 feet since July 13, 1936.

Wells in the Tiger River area, in Spartanburg
and Greenville Counties, S. C.--Continued

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
14	R. B. Taylor, 2 miles N. 71° W. of Greer.	31	72	25.46	35.46
15	A. W. Neves, 6 miles N. 46° W. of Greer.	57	48	55.64	65.64
16	J. T. Bridwell, 7½ miles N. 60° W. of Greer.	53	54	b49.29	c59.29
17	Mrs. T. E. Lyon, 4 miles S. 28° E. from Tigerville.	..	60	26.30	36.30
18	Mrs. Hamit, 1 mile N. of Tigerville.	49	60x60	46.99	56.99
19	H. P. Jones, ½ mile NW. of Mountain View School.	23.5	72	22.85	32.85
31	B. L. Bane, 1 mile S. 5° E. of Walnut Grove.	32	6	29.22	d39.22
32	John Wingo, 2½ miles S. 84° E. of Switzer.	40	1.5	36.77	e46.77
33	J. L. Foster, ½ mile S. 45° E. of Roebuck.	56	3	51.68	61.68
34	W. G. Sloan, 2½ miles S. 67° E. of Duncan.	41	6	39.63	49.63
35	A. B. Grouse, ½ mile N. 80° E. of Duncan.	31	5	27.76	f37.76
36	E. E. Brown, 1½ miles S. 10° W. of Fairforest.	30	5	27.55	37.55
37	O. P. Cleveland, 6 miles N. 10° W. of Duncan.	44	5	41.05	51.05
38	A. B. Grouse, 5½ miles N. 40° W. of Duncan.	42	5	40.40	50.40
39	W. C. Suddeth, 8 miles N. 5° W. of Duncan.	29	6	27.18	g37.18

b Incorrectly reported as 45.29 feet in Water-Supply Paper 777.

c Incorrectly reported as 55.29 feet in Water-Supply Paper 777.

d 39.22 feet July 13, 1936; 42.59 feet since July 13, 1936.

e 46.77 feet to July 13, 1936; 46.71 feet since July 13, 1936.

f 37.76 feet to June 8, 1936; 37.71 feet since June 8, 1936.

g 37.18 feet to July 13, 1936; 40.28 feet since July 13, 1936.

Description of benchmarks

(Unless otherwise indicated, benchmarks are the heads of nails. The height of the benchmark is its height with reference to the arbitrary datum.)

Well no.	Bench- mark no.	Height of bench- mark (feet)	Location
1	1	74.67	In corner of house, 16 feet NNE. of well.
	2	76.51	In 30-inch cottonwood tree, 1 foot above land surface, 16 feet SW. of well.
2	1	43.17	In 30-inch oak tree, 1 foot above land surface, 36 feet E. of well.
	2	44.10	In 12-inch hickory tree, 1 foot above land surface, 37 feet N. of well.
3	1	39.67	Top of iron stake, 10 feet NNE. of well.
	2	39.29	Top of iron stake, 22 feet W. of well.
4	1	48.71	Top of iron pipe, 16 feet N. of well.
	2	49.56	Top of iron pipe, 42 feet SE. of well.
6	1	56.33	In 15-inch pecan tree, 4 inches above land surface, 8 feet SW. of well.
	2	56.10	In 6-inch apple tree, 1 foot above land surface, 25 feet NNW. of well.

Description of benchmarks--Continued

Well no.	Bench-mark no.	Height of bench-mark (feet)	Location
7	1	25.11	In root of mulberry tree, 4 inches above land surface, 12 feet S. of well.
	2	23.50	Cross in rock at base of chimney, 10 inches above land surface, 40 feet NW. of well.
8	1	46.56	In 14-inch oak tree, 1 foot above land surface, 63 feet SE. of well.
	2	44.82	Cross in rock at base of chimney, 28 feet S. of well.
9	1	39.85	In 20-inch chinaberry tree, 1 foot above land surface, 48 feet NW. of well.
	2	41.37	In 30-inch peach tree, 3.5 feet above land surface, 70 feet WNW. of well.
10	1	37.85	In 18-inch red oak tree, 1 foot above land surface, 10 feet S. of well.
	2	35.90	Square mark on S. cornerstone of front wing of house, 1 foot above land surface, 40 feet W. of well.
12	1	42.67	In post, 1 foot above land surface, 65 feet S. of well.
	2	44.56	In post, 1 foot above land surface, 115 feet W. of well.
14	1	36.14	In 6-inch oak tree, 1 foot above land surface, 25 feet N. of well.
	2	33.82	In 6-inch hickory tree, 1 foot above land surface, 30 feet S. of well.
15	1	64.60	In 18-inch hickory tree, 1 foot above land surface, 18 feet NE. of well.
	2	64.56	In 12-inch oak tree, 1 foot above land surface, 30 feet E. of well.
16	1	58.96	In 24-inch oak tree, 1 foot above land surface, 20 feet S. of well.
	2	58.72	Top of iron bar, 2 inches above land surface, 3 feet W. of well.
17	1	37.97	In 12-inch red oak tree, 1 foot above land surface, 6 feet E. of well.
	2	37.00	In 14-inch oak tree, 1 foot above land surface, 60 feet N. of well.
18	1	55.00	In 8-inch pine tree, 1 foot above land surface, 45 feet NW. of well.
	2	53.39	Top of iron bar at corner of crib, 3 inches above land surface, 36 feet N. of well.
19	1	33.12	In 15-inch pine tree, 1 foot above land surface, 15 feet E. of well.
	2	32.86	In 12-inch pine tree, 1 foot above land surface, 30 feet S. of well.
31	1	40.67	In 30-inch chinaberry tree, 1 foot above land surface, 35 feet S. of well.
	2	39.86	In 8-inch pear tree, 1 foot above land surface, 45 feet SW. of well.
32	1	46.72	In 5-inch oak tree, 0.5 foot above land surface, 15 feet W. of well.
	2	50.82	In 10-inch persimmon tree, 1 foot above land surface, 70 feet WNW. of well.
33	1	62.12	Head of $\frac{1}{2}$ -inch bolt at N. corner of well curbing.
	2	62.50	In 20-inch pecan tree, 1 foot above land surface, 55 feet E. of well.
34	1	51.12	In E. side of large mulberry tree, 1 foot above land surface, 50 feet S. of well.
	2	50.16	Cross on NE. corner of well curbing.
35	1	39.35	In 36-inch black locust tree, 2 feet above land surface, 25 feet N. of well.
	2	38.44	In 30-inch black locust tree, 1 foot above land surface, 40 feet N. of well.
36	1	39.45	In 15-inch peach tree, 1 foot above land surface, 70 feet N. of well.
	2	34.72	In telephone pole, 1 foot above land surface, 60 feet NW. of well.

Description of benchmarks--Continued

Well no.	Bench-mark no.	Height of bench-mark (feet)	Location
37	1	50.19	In 30-inch cedar tree, 1 foot above land surface, 10 feet E. of well.
	2	47.27	In 8-inch black walnut tree, 1 foot above land surface, 45 feet W. of well.
38	1	53.07	In 10-inch mulberry tree, 1 foot above land surface, 40 feet S. of well.
	2	50.94	Cross on N. corner of well curbing.
39	1	42.62	In telephone pole, 1 foot above land surface, 130 feet E. of well.
	2	41.19	In mortar of chimney, 1 foot above land surface, 40 feet ENE. of well.

Water levels in wells in the Tiger River area, in Spartanburg
and Greenville Counties, S. C., in feet above the arbitrary datum

Date	1	2	3	4	6	7	8	9	Average
1934									
June 1-5	10.69	9.31	11.27	11.54	9.82	13.45	10.07	.....	.....
11-12	.....	.....	11.03	9.71	.....	.....	10.22	14.15	.....
14-15	10.55	9.50	11.13	.....	10.94	13.79	.....	.....	.....
18-19	10.50	9.57	11.23	9.73	10.00	13.67	10.32	14.32	10.93
25-27	10.44	9.69	11.35	9.79	10.09	13.47	10.40	14.53	11.03
July 2-5	10.39	9.88	11.44	9.86	10.21	13.13	10.56	14.78	11.13
9-12	10.38	10.04	11.46	9.95	10.32	12.61	10.72	14.87	11.21
16	10.33	10.18	11.50	10.09	10.45	12.34	10.76	14.91	11.23
23-24	10.27	10.31	11.47	10.24	10.59	11.90	10.86	14.74	11.31
30	10.22	10.42	11.41	10.34	10.66	11.73	10.94	14.54	11.33
Aug. 6	10.18	10.56	11.32	10.45	10.66	11.40	11.00	14.22	11.31
13	10.05	10.69	11.22	10.56	10.73	11.07	11.06	13.92	11.27
20	.....	10.78	11.13	10.66	10.79	10.70	11.13	13.63	11.31
27	.....	10.84	11.02	10.74	10.79	10.45	11.10	13.25	11.23
Sept. 3-5	.....	10.92	10.92	10.80	10.92	10.35	.....	12.93	11.28
10	.....	10.90	10.80	10.78	10.86	10.06	11.07	12.59	11.11
17	.....	10.93	10.73	10.44	10.88	9.98	11.17	12.33	11.12
24	.....	10.88	10.59	10.79	10.80	9.74	10.96	12.01	10.96
Oct. 1-4	.....	10.81	10.49	10.79	10.79	9.51	10.89	11.74	10.86
8	.....	10.72	10.38	10.77	10.69	9.35	10.81	.....	.....
15	.....	10.72	10.47	10.74	10.61	10.36	10.72	.....	10.77
22	.....	10.71	10.52	10.69	10.58	10.36	10.67	.....	10.74
29	10.07	10.62	10.48	10.62	10.55	10.20	10.57	10.95	10.61
Nov. 5	10.10	10.55	10.41	11.09	10.49	9.97	10.50	10.84	10.58
12	10.09	10.45	10.34	10.46	10.43	9.64	10.36	10.68	10.36
19	10.08	10.36	10.25	10.39	10.38	9.33	10.28	10.56	10.34
26	10.05	10.36	10.16	10.31	10.32	9.11	10.17	10.45	10.24
Dec. 3	10.05	10.19	10.12	10.23	10.23	9.53	10.09	10.55	10.20
10	10.05	10.17	10.15	10.20	10.23	9.44	10.12	10.28	10.18
17	10.03	10.09	10.10	10.10	10.13	9.18	.....	10.19	10.08
24	10.00	9.98	10.03	10.01	10.04	9.31	.....	10.08	10.00
31	.....	.....	10.06	.....	10.01	10.00	.....	10.01	10.01
1935									
Jan. 7	10.00	10.01	10.30	9.94	9.95	11.22	.....	9.98	10.09
14	9.98	10.03	10.47	9.85	9.89	11.70	.....	9.95	10.07
21	9.99	10.05	10.58	9.82	9.91	11.87	.....	9.97	10.07
28	9.95	10.07	10.70	9.74	9.89	12.39	.....	10.04	10.09
Feb. 4	9.95	10.21	10.84	9.77	9.96	12.47	.....	10.27	10.16
11	9.94	10.28	10.90	10.19	9.99	12.35	.....	.....	10.18
18	9.92	10.43	11.05	9.86	10.04	13.95	9.64	10.68	10.27
25	9.94	10.64	11.19	9.84	10.13	13.95	9.64	10.84	10.32
Mar. 4	9.90	10.83	11.31	9.90	10.21	13.84	9.63	11.02	10.36
11	9.93	11.04	11.43	10.01	10.35	13.85	9.78	11.23	10.47
18	9.88	11.26	11.53	10.09	10.39	14.41	9.75	11.41	10.57
25	9.96	11.60	11.70	10.25	10.59	14.64	10.01	11.65	10.72
Apr. 1	9.93	11.79	11.76	10.39	10.67	14.31	10.05	11.80	10.75
8	9.96	12.03	11.86	10.45	10.78	14.65	10.17	11.95	10.86
15	10.00	12.30	12.01	10.54	10.91	14.68	10.30	12.10	10.89
22	10.02	12.51	12.10	10.62	10.94	15.45	10.38	12.23	11.06

Water levels in wells in the Tiger River area--Continued

Date	1	2	3	4	6	7	8	9	Average
1935									
Apr. 29	10.05	12.73	12.19	10.71	11.04	15.05	10.51	12.32	11.13
May 6	10.10	12.90	12.25	10.79	11.07	14.90	10.60	12.39	11.18
13	10.13	13.04	12.30	10.88	11.13	14.71	10.72	12.48	11.24
20	10.22	13.17	12.30	11.01	11.20	14.83	10.84	12.57	11.39
27	10.24	13.24	12.27	11.05	11.23	14.36	10.90	12.58	11.33
June 3	.....	13.35	12.26	.....	.....	15.30	.....	12.63	.....
10	10.38	13.40	12.21	11.23	11.37	13.94	11.14	12.62	11.39
17	10.40	13.46	12.16	11.34	11.41	12.74	11.27	12.55	11.36
24	10.48	13.61	12.06	11.38	11.43	13.26	11.29	12.40	11.38
July 1	10.58	13.44	11.97	11.44	11.44	12.89	11.40	12.28	11.35
8	10.65	13.47	11.90	11.51	11.45	12.65	11.50	12.16	11.35
15	10.71	13.43	11.81	11.54	11.43	12.34	11.53	11.94	11.30
22	10.79	13.36	11.70	11.57	11.38	12.07	11.52	11.71	11.27
29	10.82	13.33	11.62	11.61	11.27	12.05	11.55	11.55	11.25
Aug. 5	10.86	13.24	11.59	11.61	11.33	11.77	11.54	11.37	11.20
12	10.91	13.14	11.44	11.60	11.28	11.48	11.52	11.21	11.14
19	10.96	13.02	11.35	11.62	11.24	11.16	11.52	11.05	11.15
26	10.91	12.96	11.26	11.58	11.18	11.57	11.47	10.91	11.11
Sept. 2	11.04	12.86	11.17	11.56	11.12	11.45	11.40	10.75	11.08
9	11.09	12.83	11.10	11.55	10.90	11.27	11.41	10.65	11.07
16	11.10	12.72	11.02	11.45	10.99	11.14	11.30	.....	11.05
23	11.20	12.60	10.96	11.41	10.94	10.94	11.21	10.42	10.99
30	11.13	12.48	10.90	11.35	10.88	10.69	11.15	10.33	10.93
Oct. 7	11.12	12.30	10.81	11.24	10.79	10.37	11.05	10.21	10.82
14	11.18	12.20	10.72	11.22	10.78	10.10	11.06	10.13	10.77
21	11.18	12.07	10.52	11.13	10.72	9.81	11.00	10.03	10.69
28	11.20	11.96	10.52	11.05	10.65	9.56	10.95	9.94	10.68
Nov. 4	11.20	11.80	10.42	10.94	10.57	9.33	10.84	9.83	10.51
11	11.20	11.70	10.32	10.85	10.48	9.25	10.76	.....	10.45
18	11.18	11.60	10.21	10.75	10.38	9.44	10.67	.....	10.45
25	11.17	11.47	10.11	10.65	10.31	9.27	10.54	.....	10.29
Dec. 2	11.14	11.35	10.03	10.54	10.21	9.08	10.44	.....	10.26
9	11.19	11.31	9.95	10.53	10.18	8.96	10.51	.....	10.25
16	11.20	11.15	9.86	10.39	10.07	9.19	10.33	.....	10.17
23	11.18	11.03	9.78	10.41	10.00	9.03	10.26	.....	10.10
1936									
Jan. 6	11.13	11.58	11.73	.....	9.96	.....	10.30	.....	.....
13	11.14	13.10	10.51	10.34	9.84	16.83	10.21	.....	10.92
20	11.10	13.08	10.76	9.84	9.80	18.01	10.00	10.14	10.98
27	11.20	13.55	10.99	10.11	9.93	16.95	10.10	10.26	11.10
Feb. 3	.....	13.94	11.13	10.10	10.08	16.88	10.18	.....	.....
10	11.40	14.53	11.53	10.26	10.25	19.45	10.35	.....	.....
17	11.51	15.20	11.66	10.04	10.37	20.01	10.36	11.69	11.97
24	11.60	15.92	11.88	10.09	10.50	19.58	10.49	12.17	12.22
Mar. 2	11.74	16.55	12.07	10.15	10.73	19.01	10.66	12.86	12.50
9	11.88	16.99	12.18	10.29	10.91	18.45	10.81	13.49	12.64
16	12.03	17.29	12.26	10.29	11.00	18.08	11.05	13.99	12.78
23	12.15	17.40	12.34	10.35	11.23	18.07	11.18	14.20	12.88
30	12.35	17.62	12.56	10.59	11.38	20.17	11.47	14.48	13.28
Apr. 13	12.69	18.54	13.42	10.89	11.67	22.17	11.94	15.38	13.97
20	12.84	19.15	13.82	10.97	11.82	21.03	12.11	16.08	14.25
27	13.13	19.55	14.09	11.12	12.03	20.34	12.36	16.78	14.52
May 4	13.48	19.71	14.30	11.33	12.26	19.77	12.70	17.23	14.75
11	13.83	19.56	14.38	11.53	12.43	19.13	12.98	17.36	14.82
18	14.20	19.30	14.39	11.72	12.56	18.60	13.30	17.17	14.88
25	14.54	18.99	14.35	11.72	12.67	18.22	13.58	16.95	14.86
June 1	14.81	18.65	14.26	12.10	12.73	17.51	13.84	16.66	14.80
8	15.10	18.29	14.11	12.25	12.86	16.99	14.00	16.30	14.71
15	15.35	17.95	13.98	12.42	12.90	16.56	14.18	15.98	14.59
22	15.50	17.58	13.79	12.41	12.86	16.03	14.24	15.59	14.44
29	15.72	17.02	13.66	12.63	12.86	16.70	14.34	15.30	14.38
July 6	15.85	17.02	13.46	12.69	12.77	15.34	14.30	14.89	13.93
13	16.00	16.75	13.32	12.79	12.75	15.08	14.38	14.56	14.11
20	16.13	16.48	13.20	12.81	12.69	14.74	14.34	14.20	13.96
27	16.25	16.24	13.02	12.83	12.61	14.51	14.28	13.85	13.81
Aug. 3	16.30	16.00	12.87	12.81	12.49	15.00	14.16	13.48	13.72
10	16.40	15.81	12.75	12.79	12.44	15.46	14.15	13.20	13.67
17	16.46	15.60	12.64	12.77	12.37	15.40	14.03	12.97	13.54
24	16.49	15.36	12.58	12.72	12.27	15.17	13.92	12.74	13.44
31	16.45	15.13	12.48	12.64	12.17	14.63	13.77	12.47	13.30
Sept. 7	16.42	14.96	12.45	12.61	12.09	14.21	13.68	12.30	13.19

Water levels in wells in the Tiger River area--Continued

Date	1	2	3	4	6	7	8	9	Average
1936									
Sept. 14	16.50	14.79	12.37	12.53	11.97	13.86	13.58	12.10	13.10
21	16.55	14.63	12.30	12.51	11.91	13.55	13.56	11.97	12.99
28	16.55	14.43	12.22	12.46	11.83	13.18	13.82	11.81	12.93
Oct. 5	16.50	14.26	12.13	12.36	11.71	13.13	13.34	11.62	12.81
12	16.44	14.20	12.19	12.30	11.62	14.32	13.27	11.54	12.89
19	16.44	14.27	12.45	12.35	11.55	15.46	13.30	11.66	13.00
26	16.47	14.22	12.61	12.11	11.54	15.36	13.24	11.58	13.00
Nov. 2	16.41	14.03	12.62	12.22	11.45	15.07	13.10	11.70	12.87
9	16.37	13.91	12.58	12.19	11.43	14.74	13.06	11.99	13.01
16	16.26	13.79	12.43	12.11	11.34	14.46	12.90	11.96	12.89
23	16.30	13.75	12.35	12.11	11.35	14.21	12.92	12.05	12.89
30	16.20	13.65	12.21	12.03	11.28	13.69	12.84	12.00	12.80
Dec. 7	16.26	.....	12.15	12.09	11.28	13.72	12.93	12.00	12.79
14	16.12	13.50	12.01	11.97	11.18	13.59	12.72	11.93	12.71
21	16.05	13.47	11.97	11.99	11.10	14.64	12.62	11.70	12.85
28	16.07	13.48	12.07	11.95	11.10	14.81	12.68	11.61	12.92
1937									
Jan. 1-4	15.80	13.55	12.33	12.19	11.05	19.44	12.60	12.13	13.27

Date	10	12	14	15	16	17	18	19
1934								
June 1-6	.....	10.87	11.40	9.30	9.40	14.94	11.83	.....
11-12	12.35	11.12	.....	.....	.....	.....	.....	.....
14-15	.....	.....	11.87	9.35	9.86	15.18	11.91	.....
18-19	12.45	11.34	12.01	9.38	10.16	15.16	11.99	.....
25-27	12.54	11.47	12.16	9.41	10.55	15.08	11.98	.....
July 2-5	12.63	11.55	12.22	9.52	11.04	15.67	12.02	.....
9-12	12.64	11.61	12.30	9.58	11.48	14.84	12.03	.....
16	12.62	11.65	12.24	9.74	10.98	14.75	12.06	.....
23-24	12.51	11.67	12.01	9.85	12.41	14.64	12.06	.....
30	12.56	11.65	11.82	9.99	12.79	14.52	12.05	.....
Aug. 6	12.20	11.61	11.54	10.10	13.06	14.40	12.00	.....
13	12.01	11.55	11.25	10.23	13.30	14.30	11.95	.....
20	11.85	11.51	10.94	10.46	13.49	14.20	11.90	.....
27	11.65	11.45	10.67	10.46	13.52	14.09	11.79	.....
Sept. 3-5	11.49	11.38	10.61	10.64	13.57	14.00	11.72	.....
10	11.41	11.36	10.55	10.64	13.43	13.89	11.58	.....
17	11.17	11.31	10.51	10.76	13.42	13.79	11.50	.....
24	11.01	11.25	10.40	10.77	13.16	13.71	11.35	.....
Oct. 1-4	10.89	11.13	10.22	10.82	12.99	13.62	11.24	.....
8	.....	11.02	.....	.....	.....	.....	.....	.....
15	10.72	10.91	10.13	10.86	12.56	13.58	11.02	.....
22	10.66	10.82	10.37	10.88	12.40	13.53	10.93	.....
29	10.61	10.73	10.43	10.84	12.15	13.45	10.84	.....
Nov. 5	10.58	10.64	10.38	10.83	11.95	13.42	11.75	.....
12	10.51	10.53	10.19	10.69	.....	13.35	10.64	.....
19	10.46	10.42	10.05	10.62	11.42	13.30	10.55	.....
26	10.40	10.32	9.90	10.50	11.18	.....	10.44	.....
Dec. 3	10.33	10.24	9.76	10.41	10.95	13.40	10.39	.....
10	10.29	10.18	9.75	10.41	10.85	.....	10.29	.....
17	10.20	10.13	9.63	10.27	10.57	.....	10.19	.....
24	10.08	10.07	9.52	10.12	10.30	.....	10.10	.....
31	10.00	10.01	.....	10.02	10.09	.....	10.01	.....
1935								
Jan. 7	9.98	9.97	.....	9.98	.....	.....	9.96	.....
14	9.96	9.94	.....	9.84	9.73	.....	9.91	.....
21	9.94	9.89	10.10	9.77	9.55	.....	9.88	.....
28	9.99	9.83	10.35	9.59	9.32	.....	.....	.....
Feb. 4	10.09	9.83	10.61	9.61	9.30	.....	.....	.....
11	10.16	9.83	10.78	9.44	9.10	.....	9.74	.....
18	10.30	9.84	10.89	9.33	8.97	.....	9.70	.....
25	10.45	9.84	11.07	9.25	8.89	.....	9.72	10.00
Mar. 4	10.60	9.85	11.21	8.84	8.79	.....	9.72	9.93
11	10.76	9.87	11.34	9.14	8.78	.....	9.74	9.92
18	10.95	9.97	11.36	8.97	8.73	.....	9.78	10.19
25	11.13	10.10	11.60	9.02	8.83	.....	9.89	10.12
Apr. 1	11.26	10.24	11.71	8.91	8.85	.....	9.93	10.06
8	11.37	10.41	11.73	8.88	8.98	.....	.....	10.21
15	11.45	10.64	11.89	8.83	9.12	.....	.....	8.91
22	11.52	10.80	11.92	8.77	9.31	.....	.....	10.15

Water levels in wells in the Tiger River area--Continued

Date	10	12	14	15	16	17	18	19
1935								
Apr. 29	11.57	10.95	12.00	8.77	9.48	.....	.....	10.16
May 6	11.60	11.09	12.07	8.74	9.63	.....	.....	10.06
13	11.65	11.21	12.10	8.77	9.83	.....	.....	9.92
20	11.70	11.29	12.13	8.77	.....	.....	.....	9.92
27	11.72	11.37	12.04	8.78	10.14	.....	.....	9.95
June 3	11.73	11.38	11.97	8.88	10.32	.....	.....	9.92
10	11.70	11.40	11.89	8.96	10.47	.....	.....	9.91
17	11.65	11.41	11.79	9.06	10.60	.....	.....	9.80
24	11.60	11.40	11.65	9.12	10.67	.....	.....	9.72
July 1	11.49	11.38	11.46	9.19	10.75	.....	.....	9.61
8	11.42	11.38	11.22	9.31	10.86	.....	.....	9.60
15	11.30	11.36	10.98	9.57	10.88	.....	.....	9.61
22	11.20	11.34	10.71	9.42	10.86	.....	.....	10.10
29	11.14	11.35	10.65	9.50	10.87	.....	.....	10.10
Aug. 5	11.05	11.32	10.57	9.54	10.83	.....	.....	9.89
12	10.95	11.26	10.46	9.69	10.80	.....	.....	9.77
19	10.86	11.21	10.39	9.64	10.78	.....	.....	10.71
26	10.82	11.18	10.47	9.66	10.75	.....	.....	10.14
Sept. 2	10.80	11.17	10.82	9.70	10.73	.....	.....	10.00
9	10.76	11.13	11.19	9.74	10.82	.....	.....	10.06
16	10.71	11.08	11.37	9.74	10.83	.....	.....	10.00
23	10.67	11.03	11.46	9.76	10.89	.....	.....	9.87
30	10.61	10.98	11.36	9.78	10.94	.....	.....	9.77
Oct. 7	10.54	10.92	11.22	9.74	10.94	.....	.....	9.66
14	10.44	10.76	11.00	9.80	11.04	.....	.....	9.60
21	10.35	10.80	10.67	9.80	11.07	.....	.....	9.55
28	10.26	10.76	10.41	9.83	11.07	.....	.....	.....
Nov. 4	10.13	10.71	10.16	9.82	11.03	.....	.....	9.49
11	10.02	10.62	9.98	9.83	10.95	.....	.....	9.57
18	.....	10.58	9.83	9.84	10.89	.....	.....	9.93
25	.....	10.48	9.81	9.80	10.71	.....	.....	9.77
Dec. 2	.....	10.41	9.75	9.80	10.63	.....	.....	9.68
9	.....	10.37	9.75	9.90	10.65	.....	.....	9.65
16	.....	10.27	9.61	9.86	10.49	.....	.....	9.68
23	.....	10.21	9.46	9.86	10.38	.....	.....	9.63
30	.....	.....	.....	.....	.....	.....	.....	.....
1936								
Jan. 6	.....	.....	.....	.....	.....	.....	.....	.....
13	12.60	10.41	10.12	9.95	10.48	.....	.....	11.40
20	11.89	10.28	10.51	9.98	10.78	.....	.....	11.30
27	11.66	10.29	11.31	10.02	11.18	.....	.....	10.98
Feb. 3	12.17	10.42	11.91	10.16	11.65	.....	.....	.....
10	.....	10.72	12.45	10.38	12.26	.....	.....	11.27
17	13.30	11.01	12.89	10.53	12.82	.....	.....	11.28
24	13.90	11.39	13.43	10.69	13.40	.....	.....	11.20
Mar. 2	14.48	11.63	13.88	10.94	14.10	.....	.....	11.04
9	14.71	11.77	14.09	11.15	14.70	.....	.....	10.93
16	14.80	11.83	14.15	11.41	15.30	.....	.....	10.87
23	14.71	11.82	13.96	11.62	15.65	.....	.....	10.91
30	14.99	11.82	14.04	.....	16.18	.....	.....	11.62
Apr. 6	.....	.....	.....	.....	.....	.....	.....	.....
12	16.95	11.78	15.63	12.45	16.79	.....	.....	12.44
20	.....	11.81	16.54	12.72	17.16	.....	.....	11.89
27	.....	11.90	16.77	13.08	17.85	.....	.....	11.65
May 4	.....	11.97	16.67	13.53	18.67	.....	.....	11.50
11	.....	11.96	16.37	13.92	19.26	.....	.....	11.35
18	.....	11.95	16.01	14.38	19.77	.....	.....	11.22
25	.....	11.89	15.57	14.81	20.07	.....	.....	11.07
June 1	.....	11.84	15.18	15.17	20.22	.....	.....	10.95
8	.....	11.81	14.78	15.47	20.14	.....	.....	10.87
15	.....	11.77	14.49	15.75	20.00	.....	.....	10.78
22	.....	11.71	14.09	15.91	19.67	.....	.....	10.65
29	.....	11.65	13.79	16.17	19.52	.....	15.83	10.57
July 6	.....	11.57	13.38	16.22	.....	.....	.....	10.46
13	14.39	11.51	13.04	16.35	18.84	11.90	15.44	10.37
20	.....	11.43	12.68	16.41	18.49	.....	15.31	10.27
27	.....	11.38	12.33	16.41	18.09	.....	15.21	10.16
Aug. 3	.....	11.30	12.02	16.37	17.70	.....	15.08	10.30
10	13.84	11.23	11.86	16.39	17.46	12.02	14.99	10.31
17	.....	11.14	11.86	16.28	17.10	.....	14.84	10.19
24	.....	11.06	11.91	16.20	16.80	.....	14.71	10.21
31	.....	10.97	12.03	16.07	16.46	.....	14.57	10.12

Water levels in wells in the Tiger River area--Continued

Date	10	12	14	15	16	17	18	19
1936								
Sept. 7	10.90	11.98	15.97	16.19	.....	14.47	10.09
14	10.85	11.87	15.80	15.91	11.52	14.34	10.00
21	10.83	11.68	14.75	15.72	.....	14.25	9.92
28	10.80	11.55	15.66	15.54	.....	14.17	9.85
Oct. 5	10.77	11.38	15.45	15.23	.....	14.01	10.20
12	10.74	11.48	15.34	14.97	12.04	13.92	10.90
19	10.80	12.02	15.27	14.89	.....	13.90	11.01
26	10.82	12.68	15.21	14.87	.....	13.90	10.63
Nov. 2	10.75	13.10	15.10	.....	.....	13.79	10.39
9	13.89	10.87	13.23	15.11	14.89	12.39	13.72	10.26
16	10.62	13.11	15.00	14.87	.....	13.61	10.25
23	10.60	.....	15.07	15.05	.....	13.60	10.18
30	10.61	.....	14.99	15.05	.....	13.51	10.12
Dec. 7	10.62	.....	15.10	15.19	.....	13.52	10.13
14	13.02	10.63	.....	14.97	15.02	11.81	13.39	10.13
21	10.65	.....	14.92	14.93	.....	.....	.....
28	10.65	.....	14.97	14.90	.....	.....	.....
1937								
Jan. 1	10.90	.....	15.17	14.88	.....	.....	.....

Date	31	32	33	34	35	36	37	38	39
1934									
May 25-28	.....	9.87	9.95	10.57	11.10	.....	.....	.....	.....
June 1-5	10.00	10.03	9.86	.....	.....	.....	9.22	10.19	11.00
11-12	10.24	10.47	10.01	11.00	11.47	10.98	9.47	10.42	11.11
14-15	10.31	10.38	10.00	.....	.....	.....	.....	.....	.....
18-19	10.56	10.42	10.02	11.14	11.60	11.20	9.64	10.38	11.38
25-27	10.87	10.55	10.00	11.25	11.80	11.28	9.89	10.48	11.58
July 2-5	11.27	10.70	10.04	11.39	11.94	11.28	10.09	10.58	11.68
9-12	11.41	10.83	10.11	11.48	12.08	11.27	10.32	10.68	11.73
16	11.59	10.98	10.13	11.60	12.22	11.13	10.55	10.80	11.77
23-24	.....	11.05	10.18	11.68	12.31	10.97	10.76	10.92	11.76
30	11.65	11.15	10.24	11.76	12.32	10.85	10.88	11.00	11.75
Aug. 6	11.60	11.18	10.27	11.76	12.25	10.72	10.99	11.07	11.68
13	11.53	11.24	10.30	11.75	12.16	10.56	11.05	11.12	11.61
20	11.45	11.28	10.41	11.73	12.04	10.43	11.10	11.16	11.53
27	11.28	11.25	10.42	11.63	11.88	10.29	11.09	11.18	11.42
Sept. 3-5	11.22	11.20	10.49	11.57	11.76	.....	11.08	11.19	11.35
10	11.02	11.13	10.46	11.38	11.58	10.18	11.02	11.15	11.20
17	10.97	11.13	10.55	11.32	11.44	10.18	11.97	11.13	11.08
24	10.82	10.98	10.52	11.08	11.27	10.13	10.86	11.08	10.95
Oct. 1-4	10.70	10.89	10.54	10.94	11.11	10.07	10.78	11.02	10.82
8	10.58	10.80	10.53	.....	.....	.....	10.67	10.94	10.68
15	10.56	10.75	10.53	10.68	10.88	.....	10.58	10.87	10.68
22	10.67	10.71	10.56	10.59	10.76	.....	10.56	10.82	10.63
29	10.70	10.66	10.51	10.51	10.66	9.93	10.53	10.74	10.53
Nov. 5	10.70	10.60	10.51	10.49	10.58	10.00	10.51	10.67	10.44
12	10.63	10.47	10.45	10.40	10.49	10.01	10.42	10.56	10.31
19	10.55	10.41	10.41	10.38	10.43	10.08	10.37	10.49	10.22
26	10.44	10.30	10.34	10.32	10.35	10.07	10.30	10.40	10.01
Dec. 3	10.34	10.21	10.30	10.30	10.30	10.06	10.22	10.32	10.06
10	10.34	10.16	10.36	10.33	10.28	10.03	10.19	10.26	10.08
17	10.21	10.07	10.27	10.22	10.19	10.03	10.14	10.17	9.99
24	10.08	9.98	10.17	10.11	10.11	10.03	10.07	10.09	.....
31	9.93	.....	10.08	10.01	9.91	10.00	10.01	10.01	.....
1935									
Jan. 7	10.07	10.02	10.13	9.98	9.98	10.00	9.98	9.96	.....
14	10.11	10.16	10.06	9.88	9.91	9.98	9.95	9.90	.....
21	10.31	10.18	10.03	9.86	9.91	10.08	9.95	9.88	.....
28	10.38	10.13	.....	9.76	9.85	10.21	9.92	9.84	.....
Feb. 4	10.62	10.25	10.04	9.85	9.94	.....	10.03	9.86	.....
11	10.73	10.30	9.96	9.85	9.99	10.38	10.06	9.89	.....
18	10.82	10.35	9.90	9.93	10.08	10.41	10.09	9.93	.....
25	11.02	10.53	9.93	10.06	10.22	10.43	10.16	9.99	.....
Mar. 4	11.13	10.58	9.92	10.17	10.35	10.52	10.24	10.04	.....
11	11.33	11.70	9.98	10.38	10.51	10.54	10.34	10.12	10.87
18	11.35	11.86	9.91	10.51	10.61	10.53	10.40	10.16	10.98
25	11.71	12.13	10.06	10.82	10.83	10.55	10.56	10.28	11.16

Water levels in wells in the Tiger River area--Continued

Date	31	32	33	34	35	36	37	38	39
1935									
Apr. 1	11.81	12.07	10.06	10.98	10.94	10.56	10.60	10.33	11.20
8	12.00	11.21	10.11	11.20	11.09	10.53	10.67	10.39	11.26
15	12.21	11.36	10.13	11.42	11.22	10.48	10.72	10.49	11.30
22	12.38	11.42	10.17	11.60	11.32	10.45	10.78	10.53	11.33
29	12.90	11.56	10.23	11.79	11.41	10.45	10.82	10.59	11.42
May 6	12.72	11.64	10.25	11.93	11.45	10.54	10.87	10.65	11.46
13	12.82	11.73	10.31	12.11	11.53	10.60	10.90	10.71	11.50
20	12.91	11.81	10.37	12.28	11.63	10.62	10.95	10.77	11.62
27	12.89	11.81	10.38	12.39	11.64	10.56	10.98	10.81	11.60
June 3	13.00	11.89	10.47	12.56	11.71	10.50	11.03	10.89	.....
10	13.03	11.91	10.52	12.70	11.74	10.41	11.09	10.95	11.39
17	13.20	11.96	10.63	12.83	11.75	10.31	11.13	11.01	11.71
24	13.10	11.89	10.61	12.87	11.68	10.22	11.15	11.04	11.65
July 1	13.16	11.93	10.68	12.96	11.62	10.14	11.15	11.06	11.71
8	13.15	11.93	10.77	13.06	11.58	10.10	11.16	11.11	11.59
15	13.04	11.85	10.79	13.05	11.46	9.99	11.08	11.11	11.49
22	12.88	11.76	10.81	13.00	11.58	10.03	10.98	11.09	11.53
29	12.79	11.69	10.86	13.01	11.51	9.98	10.95	11.12	11.61
Aug. 5	12.62	11.61	10.87	12.92	11.21	9.94	10.93	11.14	11.57
12	12.51	11.51	10.92	12.82	11.12	10.01	10.92	11.11	11.53
19	12.36	11.41	10.98	12.74	11.07	9.98	10.89	11.11	11.51
26	12.22	11.34	10.94	12.66	11.01	10.08	10.84	11.09	11.57
Sept. 2	12.03	11.20	10.93	12.54	11.03	9.95	10.80	11.09	11.57
9	11.96	11.16	10.98	12.47	10.96	9.92	10.77	11.09	11.52
16	11.79	11.02	10.95	12.31	10.91	9.95	10.52	11.06	11.52
23	11.65	10.88	10.94	12.21	10.86	10.00	10.65	11.06	11.38
30	11.55	10.80	10.95	12.12	10.83	10.05	10.61	11.04	11.30
Oct. 7	11.43	10.67	10.89	11.94	10.74	9.94	10.52	10.97	11.19
14	11.38	11.52	10.91	11.89	10.60	9.93	10.45	10.94	11.13
21	11.30	10.54	10.89	11.75	10.61	9.93	10.35	10.86	11.00
28	11.15	11.43	10.88	11.65	10.54	9.92	10.23	10.80	10.92
Nov. 4	11.00	10.31	10.83	11.48	10.42	9.90	10.15	10.71	10.75
11	10.85	10.21	10.80	11.32	10.31	9.89	9.09	10.66	10.93
18	10.72	10.10	10.76	11.17	10.19	9.88	9.94	10.58	10.69
25	10.56	9.99	10.50	10.97	9.07	9.88	9.84	10.51	10.64
Dec. 2	10.41	9.87	10.63	10.82	9.95	9.87	9.57	10.46	10.56
9	10.41	9.82	10.68	10.76	9.88	9.84	9.72	10.47	10.52
16	10.21	9.70	10.57	10.55	9.76	9.82	9.63	10.39	10.44
23	10.10	9.60	10.50	10.40	9.66	9.78	9.57	10.35	10.40
1936									
Jan. 6	10.05	.....	11.12	.....	10.13	.....	.....	.....	.....
13	10.39	10.10	10.43	10.60	10.25	10.66	9.52	10.40	11.22
20	10.74	10.82	10.52	10.70	10.44	10.62	9.78	10.56	11.57
27	11.36	10.08	10.37	10.18	10.61	11.32	10.09	10.74	11.85
Feb. 3	11.90	.....	10.38	11.24	10.82	10.66	.....	.....	.....
10	12.32	.....	10.52	.....	.....	.....	10.75	11.09	.....
17	12.73	.....	10.54	11.98	11.36	11.24	11.06	11.22	12.72
24	13.29	.....	10.61	12.33	11.61	11.73	11.40	11.35	13.00
Mar. 2	13.82	.....	10.75	12.72	11.91	12.18	11.75	12.05	13.34
9	14.14	.....	10.85	13.08	12.21	12.20	12.08	11.73	13.04
16	14.34	.....	11.00	13.47	12.48	12.14	12.33	11.89	.....
23	14.36	.....	11.06	13.73	12.66	11.88	12.43	12.01	.....
30	14.63	.....	11.26	14.07	12.90	11.85	12.56	12.19	.....
Apr. 6	14.96	.....	.....	.....	.....	.....	.....	.....	.....
13	15.59	.....	11.55	15.15	13.62	13.78	12.95	12.55	.....
20	16.45	.....	11.64	15.73	14.03	15.10	13.53	12.79	.....
27	.....	.....	11.82	16.27	14.46	15.63	14.07	13.06	.....
May 4	.....	.....	12.02	16.77	14.81	15.73	14.45	13.37	.....
11	.....	.....	12.17	17.03	14.69	15.48	14.60	13.64	.....
18	.....	.....	12.34	17.21	15.07	14.99	14.63	13.93	.....
25	.....	.....	12.50	17.26	15.04	14.35	14.55	14.16	.....
June 1	.....	.....	12.69	17.21	.....	13.73	14.47	14.38	.....
8	.....	.....	12.80	17.07	14.72	13.03	14.32	14.52	.....
15	.....	.....	12.92	16.92	14.55	12.31	14.16	14.36	.....
22	.....	.....	12.98	16.66	14.32	11.61	14.00	14.68	.....
29	.....	.....	13.18	16.51	14.18	11.30	13.88	14.78	.....
July 6	.....	.....	13.21	16.21	13.98	11.02	13.67	14.72	.....
13	15.58	15.80	13.35	16.06	13.82	10.78	13.53	14.76	14.31

Water levels in wells in the Tiger River area--Continued

Date	31	32	33	34	35	36	37	38	39
1936									
July 20	.....	.....	13.43	15.84	13.62	10.57	13.32	14.66	.....
27	.....	.....	13.48	15.59	13.41	10.35	13.11	14.54	.....
Aug. 3	.....	.....	13.50	15.37	13.23	10.23	12.95	14.48	.....
10	14.71	15.26	13.58	15.23	13.09	10.07	12.79	14.45	13.98
17	.....	.....	13.62	15.00	12.90	10.00	12.55	14.31	.....
24	.....	.....	13.64	14.84	12.75	9.94	12.55	14.27	.....
31	.....	.....	13.64	14.68	12.59	9.93	12.39	14.13	.....
Sept. 7	.....	.....	13.64	14.55	12.48	9.92	12.27	14.05	.....
14	13.86	14.28	13.66	14.46	12.35	9.93	12.17	13.53	13.70
21	.....	.....	13.70	14.40	12.25	9.94	.....	13.65	.....
28	.....	.....	13.71	14.36	12.17	9.94	12.03	13.78	.....
Oct. 5	.....	.....	13.65	14.21	12.05	9.95	11.84	13.67	.....
12	13.08	13.75	13.66	14.18	11.96	10.00	11.79	13.53	13.33
19	.....	.....	13.73	14.36	12.01	10.10	11.86	13.47	.....
26	.....	.....	13.65	14.30	12.15	10.29	11.84	13.51	.....
Nov. 2	.....	.....	13.61	14.27	12.20	10.36	11.91	13.43	.....
9	13.02	13.56	13.64	14.37	12.30	10.39	11.98	13.41	13.56
16	.....	.....	13.55	14.35	12.30	10.40	12.00	13.31	.....
23	.....	.....	13.57	14.46	12.34	10.39	12.02	13.30	.....
30	.....	.....	13.53	14.38	12.27	10.37	12.04	13.20	.....
Dec. 7	.....	.....	13.60	14.44	12.23	10.30	12.05	13.19	.....
14	12.36	13.02	13.46	14.18	12.10	10.17	11.90	13.08	13.00
21	.....	.....	13.41	14.08	12.00	10.08	11.85	13.01	.....
28	.....	.....	13.44	14.03	11.95	10.06	.....	12.96	.....
1937									
Jan. 1-4	.....	.....	13.54	14.42	12.35	10.42	11.88	12.93	.....

SOUTH DAKOTA

CITY OF HURON

By A. N. Sayre

The city of Huron, S. Dak., obtained a water supply for many years prior to 1934 from a reservoir on the James River. As a result of a series of dry years that began in 1930, the flow of the James River greatly declined and the amount of storage in the reservoir became small during summer, when the draft on it was high. In 1934 the storage in the reservoir was depleted to so great an extent that it became necessary to obtain a new source of supply, and several investigations were made for the purpose of developing a supply of ground water. The city of Huron drilled a series of test wells to determine the thickness of sand and gravel beds in the glacial drift west of the city. Physical tests of samples of sand from the wells were made by Black and Veatch, consulting engineers of Kansas City, and geophysical explorations were made by B. C. Petsch of the South Dakota Geological Survey, under the direction of E. P. Rothrock, State geologist. These investigations indicated that the greatest thickness of sand and gravel lay beneath an area about 4 miles west of Huron in the $W\frac{1}{2}NW\frac{1}{4}$ sec. 9, T. 110 N., R. 62 W., and on the advice of the engineers a 90 acre tract was purchased and four large wells about 80 feet deep were drilled. The aquifers were found to contain considerable water, and from September 1934 to April 1935 the entire water supply of Huron was obtained from this development. Since that time the city's water supply has been taken at times from the James River and at times from the wells, depending on the amount of storage in the reservoir. Black and Veatch submitted several copies of their report to the City Council of Huron early in 1935. The results of the geophysical exploration of the well field were published by the South Dakota Geological Survey as Report of Investigations No. 24, a shallow water supply for Huron, S. Dak., by E. P. Rothrock and B. C. Petsch, January 1935. A summary of an investigation of the ground-water supply of Huron made in 1935, after the well field was placed in service by the writer, was published by the United States Army Engineers in the report of the Chief of Engineers, appendix 4, James and Shesenne River Basins, North Dakota and South Dakota, pages 98-107, 1935.

In August 1934 an observation well was drilled near the center of the city's property about 420 feet east and 1425 feet south of the

northwest corner of section 9. Periodic measurements of the water level have been made in this well since about the time pumping was begun. The water-level measurements and pumpage from the city's wells are given in the following table. During some periods water was pumped both from the wells and from the river, and it is not possible to determine the quantity pumped from the wells. Part of the following data were supplied by M. E. Kirby and part by D. I. Sears, city manager of Huron. Some of the water levels were interpolated from a graph furnished by Mr. Sears.

Depth to water level in an observation well near Huron, S. Dak., in feet, and pumpage from city wells, in millions of gallons a month

Date	Water level	Month	Pumpage	Date	Water level	Month	Pumpage
1934				1935			
Aug. 31	16.5	.....	....	Nov. 18	11.5	.....	....
Sept. 28	9.0	.....	....	30	20.3	November	3.6
Oct. 27	7.2	.....	....	Dec. 31	20.2	December	16.5
Nov. 30	16.0	.....	....	1936			
Dec. 29	19.6	.....	....	Jan. 31	19.5	January	15.1
1935				Feb. 29	21.5	February	17.1
Jan. 31	19.6	January	15.8	Mar. 31	22.8	March	18.0
Feb. 28	21.0	February	15.0	Apr. 29	25.8	April	18.9
Mar. 31	22.4	March	17.7	May 22	26.8	May	c 21.8
Apr. 30	12.1	April a	6.6	June 5	17.2	.....	....
June 1	24.2	May	19.6	20	14.1	.....	....
30	28.0	June	23.7	July 25	11.5	.....	....
July 16	35.4	.....	....	Aug. 29	20.8	.....	....
Aug. 1	22.2	July b	28.1	Sept. 29	28.6	.....	....
31	15.6	.....	....	Oct. 31	13.3	.....	....
Sept. 30	13.5	.....	....	Nov. 28	20.6	November	13.2
Oct. 31	12.2	.....	....	Dec. 31	20.7	December	15.5

a City water supply pumped from James River April 12 to May 2.

b City water supply pumped from James River July 20-24 and July 27 to Nov. 22.

c City water supply pumped from James River May 21 to July 27; from wells and river, July 27 to Aug. 20; from wells, Aug. 20-25; from river and wells, Aug. 25 to Sept. 15; from wells, Sept. 15 to Oct. 2; from river, Oct. 2 to Nov. 4; and from wells Nov. 4 to Dec. 31.

TENNESSEE

MEMPHIS

In 1928 and 1929 the United States Geological Survey in cooperation with the Tennessee Geological Survey made an investigation of the ground-water resources of western Tennessee. The results of this investigation have since been published.^{1/} In connection with the cooperative work records were collected of the water levels in the Auction Avenue "wet well" and the Central Avenue well, in Memphis. The fluctuations of water level in the Auction Avenue well from April 1927 to March 1931 and in the Central Avenue well from October 1928 to March 1931 are presented graphically in plate 14 in Water-Supply Paper 656. The records on these wells to September 1929 are presented graphically in plate 2 in Water-Supply Paper 638-C.

The Auction Avenue "wet well" is located in the old pumping station on Auction Avenue, Memphis. The measuring point (no. 1) is top of shell of wet well, altitude 233.03 feet above mean Gulf datum, 114.01 feet above zero datum of Memphis Water Department, and 44.01 feet above an arbitrary datum. The level of the water in the Auction Avenue "wet well" represents the static level in about 100 wells, all of which flow into tunnels leading to the "wet well". These wells are scattered over a rectangular area 5,000 by 3,000 feet, which is within 400 feet of the Wolf River at the nearest point. A record of the altitude of the water level in the Auction Avenue "wet well" taken daily at 8:30 a.m. was kept from April 1927 to October 1928; since that time an automatic water-stage recorder has been operated on the well.

The Central Avenue well is in Peabody Park, near the corner of Central Avenue and Tanglewood Street. It is 4 miles from the Mississippi River and 2 miles from the nearest pumping well of the Memphis Artesian Water Department and is in a section where there is only a little private pumping. The measuring point (no. 3) is top of well pipe rim in shelter, altitude 291.20 feet above mean Gulf datum and 85.00 feet above an arbitrary datum. An automatic water-stage recorder has been operated on the well since observations were begun in 1928.

Since the 1928-30 study a new pumping station, on Southern Avenue about 6 miles east of the Central Avenue station, has been put into

^{1/} Wells, F. G. A preliminary report on the water supply of Memphis, Tennessee: U. S. Geol. Survey Water-Supply Paper 638-A, 34 pp., 1931. Wells, F. G. Ground-water resources of western Tennessee: U. S. Geol. Survey Water-Supply Paper 656, 319 pp., 1933.

operation. The addition of this plant gives the Water Department a capacity in excess of its usual needs and permits large variations in the distribution of pumpage, with consequent variations in water level in the two observation wells.

Daily average water levels in the Auction Avenue "wet well" from October 15, 1932, to April 6, 1933, and from July 17 to December 31, 1936, are given in a following table, and daily average water levels in the Central Avenue well from October 15, 1932, to December 31, 1936, are given in another table. The water levels are given in heights above an arbitrary datum, which may be converted to altitudes above mean Gulf datum from the information given above. These records were obtained in cooperation with the Tennessee Geological Survey, under the direction of C. E. McCashin, district engineer.

Daily average water levels in the Auction Avenue "wet well",
in Memphis, Tenn., in feet above arbitrary datum

Date	1932			1933			
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1	.....	13.17	14.50	15.64	18.22	20.16	20.61
2	.....	13.04	14.20	16.25	18.44	21.22	21.00
3	.....	12.73	14.18	16.40	18.47	21.79	21.49
4	.....	12.76	14.30	16.56	18.47	22.24	21.48
5	.....	12.92	14.50	16.97	18.23	.....	22.06
6	.....	12.98	14.52	17.29	17.88	.....	22.45
7	.....	13.49	13.97	17.54	17.91	.....	.....
8	.....	13.39	13.84	17.62	17.71	23.30	.....
9	.....	13.22	14.06	17.97	17.62	23.31	.....
10	.....	13.43	14.22	17.97	17.32	22.28	.....
11	.....	13.51	14.12	17.84	16.68	21.88	.....
12	.....	13.36	14.10	17.59	16.49	21.43	.....
13	.....	13.57	14.03	17.70	16.83	20.90	.....
14	.....	13.98	13.90	17.87	16.63	20.51	.....
15	11.89	13.95	13.75	18.02	16.61	20.54	.....
16	12.08	13.78	13.72	18.13	16.48	20.86	.....
17	12.46	13.50	13.70	18.03	15.78	20.64	.....
18	12.21	13.41	13.77	17.52	15.86	19.88	.....
19	11.88	13.66	14.08	17.25	16.37	20.01	.....
20	12.05	13.76	14.03	17.10	16.72	20.10	.....
21	12.10	13.90	13.93	.....	16.98	20.08	.....
22	12.34	13.58	13.38	.....	17.21	19.88	.....
23	12.80	13.50	12.95	.....	17.44	19.80	.....
24	13.17	13.61	13.29	.....	17.48	20.18	.....
25	12.99	13.87	13.48	.....	17.53	20.38	.....
26	12.67	13.97	13.71	.....	17.77	20.34	.....
27	12.80	13.80	13.79	17.87	18.22	20.29	.....
28	13.03	14.21	14.15	17.98	18.85	20.09	.....
29	12.98	14.41	14.61	17.91	.....	20.17	.....
30	12.68	14.60	15.03	17.94	.....	20.33	.....
31	12.95	.....	15.30	17.79	.....	20.67	.....

Date	1936					
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.80	5.64	6.65	10.71	12.77
2	7.10	5.78	6.86	10.74	12.69
3	7.49	5.99	7.11	10.58	12.52
4	7.59	6.14	7.48	10.49	11.92
5	7.39	6.20	7.95	10.76	11.48

Auction Avenue "wet well",--Continued

1936						
Date	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	....	7.20	6.20	8.09	11.08	11.67
7	....	7.03	6.37	8.08	11.25	11.98
8	....	7.84	6.53	8.07	11.46	12.16
9	....	7.90	6.58	8.31	11.52	12.27
10	....	7.25	6.39	8.50	11.54	12.24
11	....	7.14	6.19	8.37	11.76	11.98
12	....	6.88	6.08	8.35	12.00	11.90
13	....	6.80	6.08	8.35	12.05	12.31
14	....	6.86	6.14	8.66	12.11	12.92
15	....	6.84	5.87	9.05	11.87	13.16
16	....	6.91	5.55	9.03	11.74	13.38
17	6.73	7.03	5.31	9.00	11.92	13.42
18	6.64	6.95	5.20	9.04	12.31	13.33
19	6.60	6.64	5.21	9.13	12.54	13.26
20	6.81	6.37	5.32	9.21	12.40	13.03
21	6.85	6.04	5.56	9.47	11.97	12.88
22	6.92	5.64	5.67	9.68	11.91	12.53
23	6.86	5.55	5.69	9.63	12.27	12.40
24	6.88	5.80	5.75	9.66	12.41	12.48
25	6.96	5.78	5.97	9.91	12.47	12.69
26	7.09	5.63	6.17	10.41	12.49	13.06
27	7.54	5.38	6.34	10.57	12.29	13.46
28	7.49	5.18	6.67	10.35	12.12	13.56
29	7.02	4.91	6.66	10.25	12.23	13.28
30	6.67	4.94	6.60	10.38	12.66	12.97
31	6.69	5.39	....	10.54	....	12.64

Daily average water levels in the Central Avenue well
in Memphis, Tenn., in feet above arbitrary datum

Date	Water level	Date	Water level	Date	Water level
Oct. 15, 1932	13.75	Nov. 11, 1932	14.60	Dec. 8, 1932	15.78
22	14.13	12	14.69	9	15.56
23	14.60	13	15.07	10	15.66
24	14.85	14	15.42	11	15.84
25	14.78	15	15.43	12	15.89
26	14.60	16	15.25	13	15.77
27	14.35	17	15.12	14	15.69
28	14.23	18	15.08	15	15.43
29	14.28	19	15.08	16	15.31
30	14.58	26	15.72	17	15.40
31	14.82	27	15.46	18	15.40
Nov. 1	14.61	28	15.38	19	15.46
2	14.30	29	15.82	20	15.26
3	14.18	30	15.88	21	15.18
4	14.07	Dec. 1	15.88	22	14.93
5	13.94	2	15.90	23	14.81
6	14.53	3	15.99	24	15.02
7	15.10	4	16.22	25	15.25
8	15.08	5	16.44	26	15.82
9	14.88	6	16.32	31	17.11
10	14.72	7	16.18		

Central Avenue well--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1933												
1	17.34	17.98	19.07	.....	.....	.....	15.22	13.97	13.19	12.16	13.36	13.52
2	17.74	17.90	19.47	.....	.....	.....	15.12	13.77	13.17	12.56	13.08	13.73
3	17.90	17.78	19.54	21.85	.....	.....	15.12	13.50	13.29	12.58	12.88	13.82
4	17.72	17.88	19.78	.....	.....	.....	15.08	13.38	13.79	12.51	12.78	13.92
5	17.40	18.07	20.25	.....	.....	.....	15.24	13.43	13.97	12.43	12.92	13.96
6	17.24	18.36	20.84	.....	.....	.....	15.18	13.69	13.85	12.41	13.18	13.92
7	17.28	18.38	20.82	.....	.....	.....	15.10	13.92	13.67	12.45	13.15	13.84
8	17.39	18.06	20.62	.....	.....	.....	15.07	14.09	13.39	12.67	12.96	13.82
9	17.42	17.65	20.55	.....	.....	.....	15.34	13.99	13.13	12.97	12.90	13.82
10	17.33	17.54	20.06	.....	.....	.....	15.66	13.70	13.13	12.89	12.83	13.89
11	17.28	17.16	20.14	.....	.....	.....	15.69	13.53	13.53	12.86	12.96	14.12
12	17.08	17.35	20.70	.....	.....	17.09	15.32	13.23	13.41	12.70	13.05	13.97
13	17.15	17.86	20.80	.....	.....	16.92	15.12	13.37	13.13	12.62	13.37	13.78
14	17.34	17.80	20.46	.....	.....	17.06	15.14	13.86	12.93	12.64	13.46	13.70
15	17.62	17.38	19.80	.....	.....	16.98	15.25	13.82	12.76	12.88	13.36	13.73
16	17.86	17.32	19.64	.....	.....	16.90	15.19	13.78	12.54	13.17	13.16	13.68
17	17.82	17.32	19.40	.....	.....	16.90	15.61	13.72	12.64	13.16	13.14	13.68
18	17.82	17.11	19.33	.....	.....	17.29	15.54	13.63	12.82	13.13	13.18	13.78
19	17.75	17.40	19.51	.....	.....	17.65	15.26	13.73	12.57	13.03	13.33	13.97
20	17.59	17.75	19.95	.....	.....	17.48	15.08	13.89	12.27	13.03	13.71	14.03
21	17.60	17.86	.....	.....	.....	16.75	15.18	14.21	12.07	13.03	13.71	14.05
22	17.82	17.97	.....	.....	.....	16.58	15.32	14.14	12.07	13.15	13.57	14.13
23	17.96	17.95	.....	.....	.....	16.32	15.33	13.92	12.11	13.27	13.42	14.08
24	18.04	17.82	19.98	.....	.....	16.08	15.08	13.72	12.35	13.22	13.31	14.20
25	18.04	17.81	20.05	.....	.....	16.19	14.98	13.40	12.73	13.11	13.17	14.58
26	17.93	18.02	20.31	.....	.....	16.38	14.97	13.10	12.57	13.12	13.27	14.97
27	17.70	18.44	20.64	.....	.....	16.23	14.82	13.25	12.32	13.12	13.51	15.00
28	17.58	18.67	20.58	.....	.....	15.80	14.45	13.58	12.11	13.11	13.54	14.78
29	17.80	.....	20.51	.....	.....	15.46	14.07	13.63	12.06	13.30	13.42	14.77
30	18.16	.....	20.51	.....	.....	15.19	14.07	13.55	11.92	13.60	13.30	14.56
31	18.18	.....	20.41	.....	.....	.....	14.19	13.31	.....	13.53	.....	14.49
1934												
1	14.55	14.42	14.37	15.78	16.69	15.21	12.45	10.71	11.40	12.76	13.51	14.48
2	14.68	14.22	14.35	16.31	16.68	15.53	12.50	10.53	11.52	12.63	13.69	14.56
3	14.76	14.07	14.34	16.23	16.66	15.50	12.00	10.38	12.09	12.42	14.07	14.94
4	14.82	14.27	14.81	16.19	16.68	15.21	12.07	10.30	12.24	12.29	14.37	14.73
5	14.65	14.70	15.19	16.12	16.96	15.22	12.27	10.38	12.30	12.26	14.74	14.34
6	14.43	14.57	15.12	15.97	16.98	15.09	12.22	10.74	12.26	12.23	14.79	14.12
7	14.53	14.35	15.06	15.88	16.88	15.00	12.12	10.69	12.17	12.50	14.75	13.96
8	14.99	14.19	14.88	16.33	16.49	14.92	12.20	10.31	12.23	12.65	14.55	13.94
9	15.21	13.91	14.80	16.82	16.23	14.68	12.46	10.01	12.51	12.61	14.47	14.23
10	15.09	13.79	14.77	16.66	15.98	14.64	12.36	9.98	13.03	12.56	14.48	14.65
11	14.76	14.18	15.31	16.34	15.68	14.86	11.99	9.97	13.13	12.58	14.49	14.55
12	14.65	14.69	15.53	16.27	15.69	14.87	11.64	9.97	12.98	12.68	14.71	14.47
13	14.65	14.74	15.45	16.28	16.05	14.69	11.45	9.98	12.76	12.75	14.65	14.35
14	15.04	14.73	15.24	16.17	16.37	14.53	11.28	10.17	12.52	12.82	14.41	14.10
15	15.44	14.49	15.19	16.67	16.22	14.35	11.23	10.44	12.35	13.20	14.24	14.05
16	15.34	14.30	15.18	17.08	15.94	14.16	11.41	10.50	12.31	13.16	14.20	14.22
17	15.05	14.23	15.16	16.85	15.98	14.20	11.35	10.66	12.71	12.87	14.25	14.57
18	14.87	14.68	15.50	16.70	15.92	14.35	11.10	10.83	12.83	12.67	14.34	14.67
19	14.71	14.86	15.89	16.46	15.83	14.26	10.86	11.05	12.80	12.53	14.72	14.65
20	14.56	15.04	15.70	16.07	15.93	14.08	10.77	11.25	12.70	12.52	14.67	14.41
21	14.87	15.10	15.52	16.17	16.14	13.86	10.72	11.15	12.59	12.69	14.74	14.27
22	15.35	15.24	15.35	16.57	15.85	13.69	10.74	10.99	12.49	13.06	14.49	14.06
23	15.25	15.42	15.23	16.95	15.57	13.28	10.95	10.88	12.52	13.13	14.37	14.18
24	15.08	15.43	15.09	16.80	15.28	13.43	10.70	10.78	12.87	13.11	14.37	14.62
25	14.75	15.08	15.52	16.50	15.03	13.72	10.41	10.80	12.84	13.12	14.49	15.15
26	14.57	15.12	16.16	16.37	14.99	13.45	10.22	10.91	12.72	13.03	14.90	15.56
27	14.68	14.79	15.98	15.98	14.95	13.04	10.21	11.59	12.45	13.03	14.88	15.58
28	14.92	14.53	15.78	15.87	14.68	12.68	10.31	11.57	12.39	13.32	14.80	15.26
29	15.16	.....	15.63	16.07	14.59	12.50	10.42	11.51	12.48	13.65	15.79	15.15
30	14.96	.....	15.56	16.49	14.62	12.38	10.86	11.44	12.54	13.67	14.85	15.28
31	14.68	.....	15.33	.....	14.87	.....	10.82	11.40	.....	13.61	.....	15.42

Central Avenue well--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1935												
1	15.06	15.17	15.42	18.06	16.97	.....	15.13	13.16	13.54	12.58	13.05	12.57
2	14.87	14.87	15.59	18.08	16.72	.....	15.05	13.02	13.86	12.41	12.96	12.39
3	14.47	14.34	16.03	17.97	16.46	.....	14.80	12.62	14.04	12.33	12.96	12.25
4	14.19	14.00	16.15	17.76	16.50	.....	14.70	12.45	14.02	12.25	13.19	12.18
5	14.14	14.31	15.85	17.68	17.12	.....	14.87	12.49	13.73	12.24	13.00	12.15
6	14.36	14.83	15.61	17.82	17.37	.....	15.11	12.77	13.48	12.37	12.70	12.13
7	14.66	15.12	15.47	18.05	17.13	.....	15.44	12.76	13.53	12.84	12.43	12.16
8	14.57	15.13	15.46	18.27	16.92	.....	15.48	12.51	.....	12.90	12.33	12.43
9	14.34	15.04	15.67	18.24	16.70	.....	15.13	12.41	.....	12.77	12.35	12.57
10	14.31	15.25	16.13	18.20	16.47	.....	14.74	12.12	.....	12.61	12.27	12.45
11	14.20	15.50	16.08	18.07	16.42	16.90	14.62	11.92	.....	12.48	12.25	12.34
12	14.04	15.58	15.86	17.87	16.93	16.77	14.30	11.88	13.21	12.49	12.31	12.31
13	14.09	15.47	15.70	17.69	16.98	16.29	14.11	12.12	13.17	12.58	12.25	12.30
14	14.26	15.47	15.91	17.88	16.75	16.05	14.40	12.18	13.01	12.68	12.25	12.31
15	14.26	15.41	16.14	18.03	16.45	15.99	14.48	11.99	12.97	12.72	12.32	12.32
16	14.08	15.52	16.25	17.88	.....	16.40	14.13	11.89	13.20	12.60	12.45	12.32
17	13.90	15.78	16.48	17.74	.....	16.76	14.05	11.87	13.12	12.30	12.34	12.23
18	13.98	15.72	16.74	17.65	.....	16.53	.....	11.85	12.86	12.16	12.44	12.22
19	14.18	15.67	.....	17.54	.....	16.12	.....	11.90	12.56	12.27	12.55	12.09
20	14.75	15.50	.....	17.58	.....	15.84	13.28	12.19	12.35	12.70	12.50	12.09
21	15.43	15.44	.....	17.87	.....	15.65	13.16	12.34	12.36	13.02	12.47	12.21
22	15.49	15.22	.....	18.05	.....	15.48	13.13	12.18	12.35	13.15	12.28	12.50
23	15.00	15.44	.....	17.99	.....	15.77	13.48	12.03	12.45	13.06	12.23	12.49
24	14.70	15.87	.....	17.70	.....	16.07	13.67	12.06	12.30	12.99	12.38	12.39
25	14.60	15.86	.....	17.42	.....	15.76	13.55	12.15	12.08	12.85	12.56	12.95
26	14.77	15.60	.....	17.20	.....	15.43	13.29	12.27	11.90	12.88	12.67	13.59
27	15.03	15.51	.....	17.08	.....	15.23	13.14	12.53	11.85	12.93	12.72	13.80
28	15.24	15.56	.....	17.55	.....	15.13	13.08	12.95	11.80	12.92	12.67	13.76
29	15.00	.....	17.22	17.68	.....	15.09	13.10	13.14	12.05	13.02	12.70	13.68
30	15.18	.....	17.35	17.29	.....	15.13	13.35	13.30	12.48	13.10	12.63	13.55
31	15.30	.....	17.63	.....	.....	.....	13.37	13.40	.....	13.10	.....	13.28
1936												
1	13.15	13.23	13.19	14.16	.....	.....	.....	8.21	6.99	7.52	9.25	10.71
2	13.19	13.50	13.57	13.79	.....	.....	.....	8.67	7.31	7.51	9.55	10.63
3	13.12	13.83	13.41	13.60	.....	.....	.....	9.07	7.27	7.55	9.54	10.45
4	13.02	13.42	13.15	13.65	.....	.....	.....	8.90	7.00	7.73	9.34	10.16
5	13.21	12.92	12.84	13.28	.....	.....	.....	8.83	7.00	7.93	9.29	10.04
6	13.64	12.72	12.68	14.61	.....	.....	.....	8.40	7.14	7.80	9.28	10.17
7	13.35	12.63	12.70	14.42	.....	.....	.....	8.14	7.42	7.68	9.52	10.09
8	13.19	12.57	13.05	14.25	.....	.....	.....	7.96	7.43	7.68	9.74	10.12
9	13.05	12.67	13.51	14.33	.....	.....	.....	8.08	7.13	7.77	9.99	10.10
10	12.05	13.12	13.62	14.28	.....	.....	.....	8.37	7.18	7.72	9.86	10.01
11	12.88	13.25	13.52	14.40	.....	.....	.....	8.19	7.40	7.87	9.73	9.85
12	13.39	13.41	13.44	14.83	.....	.....	.....	8.03	7.35	8.08	9.65	9.75
13	13.79	13.46	13.40	15.31	.....	.....	.....	7.88	7.48	8.02	9.65	9.89
14	13.82	13.36	13.30	15.26	.....	.....	.....	7.77	7.65	8.09	9.70	10.15
15	13.78	13.29	13.59	15.06	.....	.....	8.00	7.67	7.52	8.14	10.10	10.14
16	13.58	13.70	13.88	14.92	.....	.....	7.80	7.54	7.25	8.16	10.54	9.99
17	13.52	14.13	13.82	14.85	.....	.....	7.66	7.78	7.14	8.19	10.40	9.94
18	13.48	13.77	13.76	14.97	.....	.....	7.68	7.73	7.11	8.37	10.19	9.85
19	13.76	13.50	13.71	14.79	.....	.....	7.83	7.59	7.07	8.54	9.87	9.77
20	13.86	13.31	13.64	14.41	.....	.....	8.03	7.28	7.22	8.59	9.71	10.05
21	13.51	13.10	13.60	14.56	.....	.....	8.00	7.12	7.40	8.70	9.72	10.36
22	13.28	12.96	13.93	14.80	.....	.....	7.90	7.10	7.37	8.79	9.97	10.26
23	13.11	13.41	14.35	14.90	.....	.....	7.80	7.04	7.28	8.75	10.26	10.07
24	12.90	13.88	14.14	.....	.....	.....	7.67	7.14	7.11	8.78	10.22	10.44
25	12.88	13.68	13.86	.....	.....	.....	7.70	7.11	6.93	9.20	10.01	11.25
26	13.29	13.34	13.70	.....	.....	.....	7.93	6.99	6.98	9.52	9.94	11.95
27	13.57	12.96	13.50	.....	.....	.....	8.20	6.83	7.35	9.41	10.39	12.50
28	13.55	12.72	13.43	.....	.....	.....	8.41	6.65	7.65	9.23	10.64	12.83
29	13.61	12.67	13.92	.....	.....	.....	8.31	6.36	7.68	8.97	10.74	12.81
30	13.42	.....	14.40	.....	.....	.....	8.04	6.53	7.58	8.85	10.76	12.80
31	13.23	.....	14.29	.....	.....	.....	7.95	6.87	.....	9.01	.....	12.51

TEXAS

STATE-WIDE PROJECT

By W. N. White, A. N. Sayre, and Penn Livingston

Detailed investigations of ground-water conditions in certain areas in Texas were continued during 1936 by W. N. White, A. N. Sayre, Penn Livingston, and S. F. Turner, under the general supervision of Mr. White, in cooperation between the United States Geological Survey and the Texas State Board of Water Engineers. An investigation of the ground-water supplies of the El Paso, Tex., area was begun in 1935 by A. N. Sayre and Penn Livingston and was continued through 1936. The investigation in the Houston area, which was begun in 1930, was continued under the direction of Mr. White, and a manuscript report on the area was released to the city officials. In most parts of the State, no measurements were obtained of water levels in wells that were included in Water-Supply Paper 777, chiefly because of inclement weather conditions.

The following reports have been published by the Geological Survey in addition to those listed in Water-Supply Paper 777:

Sayre, A. N., Geology and ground-water resources of Ulvalde and Medina Counties, Tex.: U. S. Geol. Survey Water-Supply Paper 678, 1936.

Livingston, Penn, Sayre, A. N., and White, W. N., Water resources of the Edwards limestone in the San Antonio area, Tex.: U. S. Geol. Survey Water-Supply Paper 773-B, 1936.

Livingston, Penn, and Bridges, T. W., Ground-water resources of Kleberg County, Tex.: U. S. Geol. Survey Water-Supply Paper 773-D, 1936.

Sayre, A. N., Geology and ground-water resources of Duval County, Tex.: U. S. Geol. Water-Supply Paper 776, 1937.

In addition to the regular program of ground-water investigations a state-wide inventory of wells, begun in 1935 under the direction of Mr. Turner with funds allocated by the Works Progress Administration, was continued. The inventory consists of gathering information regarding wells and springs in certain counties, collecting samples of water for chemical analysis, and measuring the depth to the water level in all of the wells that can be measured. Information on springs and wells was collected in the following counties: Andrews, Austin, Bailey, Brazoria, Burleson, Cherokee, Comal, Dallam, De Witt, Foard, Fort Bend, Freestone, Gillespie, Glasscock, Gonzales, Gregg, Guadalupe, Hansford, Hardeman, Henderson, Howard, Karnes, Lamb, Lavaca, Lee, Leon, Lubbock, Martin, Milam, Nacogdoches, Panola, Rusk, Refugio, Smith, and Wilson. Mimeographed

reports consisting of tabulations of well data, well logs, chemical analyses, and a map showing locations of wells have been issued by the Texas State Board of Water Engineers for each of the following counties: Bailey, Cherokee, Hansford, Hardeman, Henderson, Lavaca, and Martin. Reports on the other counties in which information was obtained will be released as they are completed. In most of these counties no periodic water-level measurements are being made. In Howard County, however, periodic water-level measurements were made in a number of the wells in the well fields of the city of Big Spring. The water-level measurements in a few of these wells are given in this report.

The Resettlement Administration has continued the water-level measurements in some of the wells in certain parts of the Panhandle of Texas that were begun by C. V. Theis, H. P. Burleigh, and H. A. Waite during their reconnaissance investigation of the ground-water conditions in the southern part of the High Plains in 1933 and 1934. The Resettlement Administration, upon the advice of W. N. White, has also begun systematic water-level measurements in many additional wells in the parts of the Panhandle where resettlement projects are being undertaken. These measurements are not available for release at the present time but presumably will be released in a later report.

The Soil Conservation Service has continued systematic measurements of ground-water levels in their Elm Creek and Deer Creek areas near Temple, Tex. These measurements are included in this report following the sections on Bexar, Howard and El Paso Counties.

Bexar County

Several measurements of water level were made in 1936 in wells in Bexar County for which previous measurements were given in Water-Supply Paper 777, pp. 177-183. The description and location of the wells are given in Water-Supply Paper 777.

Water levels in wells in Bexar County, Texas

(Well numbers correspond to numbers given in Water-Supply Paper 777, pp. 177-183. Water levels are given in feet above mean sea level.)

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1. Water levels: Jan. 20, 1936, 777.04; Aug. 27, 1936, 802.47.
 2. Water level: Nov. 20, 1935, 743.54.
 3. Water levels: Nov. 19, 1935, 750.49; Jan. 18, 1936, 744.21; Aug. 26, 1936, 768.74; Dec. 30, 1936, 753.51.
 4. Water levels: Aug. 26, 1936, 773.28; Dec. 30, 1936, 756.88.
 5. Water level: Aug. 26, 1936, 873.81.
 6. Water levels: Nov. 19, 1935, 972.75; Jan. 18, 1936, 972.65; Aug. 26, 1936, 973.25; Dec. 30, 1936, 973.11.

Water levels in wells in Bexar County--Continued

7.	Water levels:	Jan. 18, 1936, 695.57; Aug. 26, 1936, 700.32; Dec. 30, 1936, 699.69.
8.	Water levels:	Nov. 19, 1936, 723.83; Jan. 18, 1936, 721.15; Aug. 26, 1936, 737.89; Dec. 30, 1936, 730.22.
9.	Discontinued	
10.	Water levels:	Nov. 20, 1935, 687.18; Jan. 18, 1936, 684.80; Aug. 28, 1936, 689.59.
11.	Water levels:	Jan. 18, 1936, 682.21; Aug. 28, 1936, 686.21;
12.	Water levels:	Nov. 19, 1935, 679.84; Jan. 18, 1936, 678.48; Aug. 28, 1936, 680.14.
13.	Water levels:	Nov. 20, 1935, 681.28; Jan. 18, 1936, 679.58; Aug. 28, 1936, 681.31.
14.	Water levels:	Nov. 20, 1935, 690.29; Jan. 18, 1936, 687.67; Aug. 28, 1936, 694.07.
15.	Water levels:	Jan. 20, 1936, 701.79; Aug. 27, 1936, 703.66.
16.	Water levels:	Jan. 20, 1936, 702.84; Aug. 27, 1936, 708.78.
17.	Water levels:	Nov. 19, 1935, 687.55; Jan. 18, 1936, 685.91; Aug. 26, 1936, 688.83; Dec. 30, 1936, 689.14.
18.	Water levels:	Nov. 19, 1935, 689.42; Aug. 26, 1936, 690.92; Dec. 30, 1936, 691.13.
19.	Water levels:	Nov. 19, 1935, 683.97; Jan. 18, 1936, 682.49; Aug. 28, 1936, 684.86; Dec. 29, 1936, 685.56.
20.	Water levels:	Jan. 20, 1936, 683.48; Aug. 27, 1936, 685.39; Dec. 30, 1936, 686.47.
21.	Water levels:	Nov. 19, 1935, 684.04; Jan. 18, 1936, 682.49; Aug. 28, 1936, 684.77; Dec. 29, 1936, 685.26.
22.	Water levels:	Nov. 20, 1935, 684.60; Jan. 18, 1936, 682.98; Aug. 26, 1936, 685.13; Dec. 31, 1936, discontinued.
23.	Water level:	Aug. 29, 1936, 682.0.
24.	Water levels:	Nov. 20, 1935, 680.5; Jan. 21, 1936, 678.26; Aug. 27, 1936, 679.7.
25.	Water levels:	Jan. 21, 1936, 681.25; Aug. 27, 1936, 682.60; Dec. 30, 1936, 684.1.
26.	Water levels:	Jan. 20, 1936, 694.87; Aug. 27, 1936, 697.18.
27.	Water level:	Aug. 27, 1936, 695.18.
28.	Water levels:	Jan. 20, 1936, 689.92; Aug. 27, 1936, 691.79.
29.	Water levels:	Nov. 21, 1935, 683.7; Jan. 21, 1936, 683.1; Aug. 29, 1936, 681.4; Dec. 30, 1936, 684.0.
30.	Water level:	Nov. 22, 1935, 691.6.
31.	Water level:	Nov. 20, 1935, 680.11.
32.	No pressure gage connection.	
33.	Water levels:	Nov. 21, 1935, 681.6; Jan. 21, 1936, 680.3; Dec. 30, 1936, 682.0.
34.	Water levels:	Nov. 19, 1935, 679.72; Jan. 21, 1936, 678.73; Aug. 29, 1936, 679.76.

Water levels in wells in Bexar County--Continued

35. Water levels: Nov. 19, 1935, 679.44; Jan. 18, 1936, 678.10; Aug. 28, 1936, 679.14.

36. Discontinued.

37. Water levels: Nov. 21, 1935, 688.2; Jan. 21, 1936, 683.4; Aug. 29, 1936, 682.1; Dec. 30, 1936, 684.1

38. Water levels: Nov. 21, 1935, 668.4; Jan. 21, 1936, 667.3; . Aug. 29, 1936, 666.6; Dec. 30, 1936, 669.1.

Howard County

The city of Big Spring obtains its water supply from wells that tap the Trinity sand in the Edwards plateau. The Edwards plateau occupies a large area south of Howard County and extends northward into the county as a triangular upland area, the northern limit of which is immediately south of Big Spring. The plateau is bounded on the north and northeast by a sharp escarpment of more than 200 feet and on the northwest by a rather gentle slope. It is underlain by the Edwards and Glen Rose limestones, below which is the Trinity sand. The Trinity crops out near the base of the escarpment and is underlain by Triassic Red Beds which, in general, do not yield water to wells. In most of the area the Trinity sand yields small amounts of water to wells. There are, however, certain rather small areas in which yields of as much as 200 gallons a minute are obtained. The city has developed four such areas as well fields. The two areas in which the largest yields are obtained are topographical and structural depressions called "sinks". In these sinks the Trinity and the overlying formations are locally present. One of the other areas shows no structural disturbance and the fourth is apparently a gentle structural depression. The logs of the wells drilled in 1936 in the largest sink, about six miles southeast of Big Spring, indicate that the Trinity sand has dropped down as much as 200 feet and that the beds of sand are inclined for nearly half a mile from the center. Before pumping began, water flowed from rather large springs at the lower side of the sinks. The heavy pumping has caused the water level to decline and the springs have ceased to flow. Heavy pumping lowers the water level in the summer, and although it recovers somewhat during the winter, when pumping is at a minimum, there has been in general an annual net decline of the water level in each of the well fields. The following measurements of water level were made by Howard Samuel, project superintendent, during an investigation of the ground-water supply of Howard County under an allocation of funds by the Works Progress Administration.

Water levels in wells in Howard County, Texas.

(Water levels are given in feet below measuring point)

1. City of Big Spring well 3. One and one half miles south of Big Spring. Measuring point, top of 6-inch casing, 1.42 feet above land surface. Nearest pumping well 300 feet northeast.

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
Jan. 17, 1936	9:00 a.m.	158.4	June 20, 1936	8:55 a.m.	170.9
May 5	9:00 a.m.	166.2	22	3:20 p.m.	171.6
8	8:50 a.m.	165.7	24	9:50 a.m.	171.4
12	8:55 a.m.	166.7	July 3	10:00 a.m.	171.9
26	11:35 a.m.	165.2	7	11:00 a.m.	172.8
28	3:15 p.m.	165.1	8	10:45 a.m.	173.1
29	2:00 p.m.	165.7	10	3:45 p.m.	173.0
June 4	10:00 p.m.	169.1	20	1:45 p.m.	175.4
11	1:50 p.m.	172.6	22	8:40 a.m.	177.4
16	3:10 p.m.	169.5	Sept. 17	10:00 a.m.	184.8
18	8:50 a.m.	171.3			

2. Texas & Pacific R. R. Co. One and one fourth miles south of Big Spring. Measuring point, top of concrete block, 1.42 feet above land surface.

Jan. 21, 1936	....	179.3	July 3, 1936	4:05 p.m.	194.6
May 5	2:15 p.m.	194.4	10	5:10 p.m.	155.2
8	9:35 a.m.	193.1	20	4:20 p.m.	200.0
12	1:30 p.m.	194.5	22	9:40 a.m.	203.3
June 22	1:00 p.m.	195.2	Sept. 17	12:50 p.m.	215.7
24	8:00 a.m.	194.4			

3. City of Big Spring well 6. Two miles south of Big Spring. Measuring point, top of 8 $\frac{1}{4}$ -inch casing in concrete block, 1.17 feet above land surface. Nearest pumping well in SE $\frac{1}{4}$ sec. 17, 7,200 feet distant.

Feb. 5, 1936	....	71.5	July 20, 1936	3:45 p.m.	72.5
May 8	8:00 a.m.	71.9	22	2:25 p.m.	72.0
June 21	1:30 p.m.	71.1	Aug. 21	8:04 a.m.	74.7
22	11:30 a.m.	72.1	Sept. 5	4:30 p.m.	72.2
24	2:45 p.m.	72.1	8	1:52 p.m.	71.7
July 3	11:40 a.m.	71.1	12	4:30 p.m.	72.0
9	2:45 p.m.	71.9	17	2:00 p.m.	71.8

4. City of Big Spring well 18. Two miles south of Big Spring. Measuring point, top of 8-inch casing, 0.83 foot above land surface. Nearest pumping well in sec. 17, 1 mile east.

Jan. 22, 1936	....	93.5	July 20, 1936	2:15 p.m.	95.5
May 7	1:55 p.m.	95.7	22	1:00 a.m.	95.6
June 18	11:05 a.m.	94.9	Aug. 10	1:50 p.m.	97.4
20	11:15 a.m.	95.0	21	10:15 a.m.	96.7
22	9:50 a.m.	95.8	Sept. 5	3:00 p.m.	94.1
24	1:55 p.m.	94.5	8	1:20 p.m.	94.0
July 3	1:35 p.m.	94.1	12	2:30 p.m.	93.6
7	2:00 p.m.	94.8	17	4:15 p.m.	93.5
8	9:20 a.m.	94.1			

5. City of Big Spring well 21. Two miles southeast of Big Spring. Measuring point, top of 7-inch casing, 1.75 feet above land surface. Nearest pumping well 3,860 feet southeast.

Jan. 28, 1936	9:00 a.m.	99.6	July 22, 1936	11:35 a.m.	102.3
May 7	11:50 a.m.	100.9	Aug. 21	1:00 p.m.	102.9
July 20	11:30 a.m.	101.2	Sept. 5	1:30 p.m.	100.0

Water levels in wells in Howard County--Continued

6. City of Big Spring well 33. Two and one-half miles southeast of Big Spring. Measuring point, top of 8-inch casing, 0.75 foot above land surface. Nearest pumping well 1,500 feet east.

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
Feb. 6, 1936	....	230.7	June 24, 1936	3:10 p.m.	231.7
May 5	8:00 a.m.	230.2	July 7	8:00 a.m.	230.9
8	10:10 a.m.	230.9	9	11:00 a.m.	230.9
29	9:30 a.m.	230.6	20	10:30 a.m.	238.7
June 16	9:10 a.m.	231.9	21	3:00 p.m.	235.2
17	2:55 p.m.	231.5	Aug. 21	2:15 p.m.	235.0
18	4:30 p.m.	230.8	Sept. 5	8:30 a.m.	232.1
19	1:00 p.m.	231.3	12	9:00 a.m.	223.7
23	3:40 p.m.	230.0			

7. City of Big Spring well 30. Two and one-half miles southeast of Big Spring. Measuring point, top of 8-inch casing, 0.25 foot above land surface. Nearest pumping well 100 feet north.

Feb. 7, 1936	9:00 a.m.	217.5	July 9, 1936	11:30 a.m.	219.9
May 5	10:00 a.m.	218.6	10	2:10 p.m.	219.8
8	10:55 a.m.	218.5	20	10:00 a.m.	221.3
June 16	8:00 a.m.	220.8	21	3:45 p.m.	223.4
17	1:25 p.m.	220.7	29	2:42 p.m.	227.2
19	2:00 p.m.	220.2	Aug. 10	9:55 a.m.	225.4
23	2:10 p.m.	220.9	21	1:36 p.m.	223.8
24	4:10 p.m.	219.1	Sept. 5	9:00 a.m.	221.6
July 7	9:15 a.m.	220.4	12	9:20 a.m.	224.6

8. City of Big Spring well 38. Two and one-half miles southeast of Big Spring. Measuring point, top of 8-inch casing, 0.58 foot above land surface. Nearest pumping well 275 feet north.

Feb. 2, 1926	....	215.2	July 10, 1926	2:50 p.m.	219.3
May 6	8:20 a.m.	214.1	20	9:30 a.m.	219.8
8	11:55 a.m.	216.0	21	2:25 p.m.	223.1
29	11:40 a.m.	217.7	29	2:00 p.m.	225.1
June 16	10:05 a.m.	219.5	Aug. 10	9:12 a.m.	223.8
18	2:20 p.m.	210.1	Sept. 5	9:45 a.m.	219.8
24	10:55 a.m.	218.8	8	11:10 a.m.	220.0
24	5:10 a.m.	218.6			

9. City of Big Spring well 45. Two and three-fourths miles southeast of Big Spring. Measuring point is land surface. Nearest pumping well 300 feet north.

Apr. 4, 1936	....	206.0	July 17, 1936	4:00 p.m.	222.1
May 6	11:05 a.m.	206.2	21	1:40 p.m.	226.1
8	2:35 p.m.	216.8	Sept. 5	11:00 a.m.	223.3
June 16	10:50 a.m.	221.4			

10. City of Big Spring well 51. Four and three-fourths miles southeast of Big Spring. Measuring point, top of 12½-inch casing, 0.67 foot above land surface. Nearest pumping well 15 feet west.

Feb. 10, 1936	9:00 a.m.	126.1	July 17, 1936	6:00 a.m.	113.1
May 7	8:00 a.m.	131.3	17	1:50 p.m.	132.3
June 17	11:20 a.m.	128.9	17	8:00 p.m.	131.9
19	11:20 a.m.	129.1	18	6:00 a.m.	112.1
23	11:15 a.m.	129.1	18	8:00 p.m.	113.9
25	11:50 a.m.	129.1	19	6:00 a.m.	113.8
July 8	4:05 p.m.	111.9	19	8:00 a.m.	131.6
10	11:45 a.m.	111.7	20	6:00 a.m.	113.8
16	6:00 a.m.	113.4	20	8:00 p.m.	131.6
16	8:00 p.m.	131.1	21	6:00 a.m.	114.6

Water levels in wells in Howard County--Continued

10. City of Big Spring well 51.--Continued.

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
July 21, 1936	11:35 a.m.	132.0	Aug. 24, 1936	6:00 a.m.	128.6
21	7:30 p.m.	131.6	25	6:00 a.m.	116.3
22	6:00 a.m.	114.2	25	8:30 p.m.	128.3
22	5:00 p.m.	.....	26	6:15 a.m.	116.9
23	6:00 a.m.	113.2	26	8:00 p.m.	135.1
23	6:00 a.m.	126.7	27	6:00 a.m.	116.9
24	6:00 a.m.	112.3	27	8:15 p.m.	135.1
24	7:20 p.m.	131.3	28	5:45 a.m.	116.6
25	6:00 a.m.	113.4	28	10:00 p.m.	137.9
26	6:30 a.m.	112.6	29	6:00 a.m.	117.8
26	6:15 p.m.	130.6	29	6:45 p.m.	137.5
27	6:00 a.m.	112.9	30	6:00 a.m.	116.1
27	8:00 p.m.	131.8	30	1:15 p.m.	133.7
28	5:45 a.m.	113.8	31	6:00 a.m.	114.1
28	9:30 p.m.	132.4	31	3:15 p.m.	133.2
29	5:45 a.m.	115.0	Sept. 1	6:00 a.m.	114.4
29	7:40 p.m.	133.2	1	7:30 p.m.	133.7
30	5:50 a.m.	115.4	2	6:00 a.m.	115.8
30	6:00 p.m.	128.0	2	7:00 p.m.	134.1
31	4:20 a.m.	114.4	3	6:15 a.m.	116.1
31	6:15 p.m.	133.0	3	5:00 p.m.	130.1
Aug. 1	5:15 a.m.	114.7	4	6:00 a.m.	115.3
1	7:00 p.m.	133.1	4	6:30 p.m.	133.4
2	6:00 a.m.	114.7	5	6:30 a.m.	115.1
2	4:30 p.m.	132.6	5	6:15 p.m.	132.1
3	5:45 a.m.	113.6	6	7:00 a.m.	114.1
3	8:45 p.m.	132.1	6	7:00 p.m.	134.4
4	5:45 a.m.	114.1	7	6:20 a.m.	115.5
4	9:00 p.m.	134.2	8	6:30 a.m.	114.8
5	5:45 a.m.	115.6	8	10:14 a.m.	132.3
5	8:45 p.m.	134.6	8	7:00 p.m.	133.1
6	5:30 a.m.	115.8	9	6:30 a.m.	115.5
6	9:15 p.m.	134.1	11	6:30 a.m.	111.7
7	5:45 a.m.	116.2	11	7:15 p.m.	132.6
7	8:45 p.m.	135.0	12	6:15 a.m.	114.0
8	5:45 a.m.	116.0	12	7:00 p.m.	133.9
8	8:00 p.m.	134.7	13	6:00 a.m.	115.0
9	6:00 a.m.	116.0	14	6:30 a.m.	115.4
9	5:00 p.m.	133.4	15	6:30 a.m.	115.7
10	5:45 a.m.	114.9	15	6:15 p.m.	134.0
10	7:00 p.m.	128.1	16	6:00 a.m.	115.1
11	5:45 a.m.	114.6	20	7:00 a.m.	115.2
11	7:00 p.m.	133.1	20	3:00 p.m.	127.1
12	6:00 a.m.	114.1	21	6:15 a.m.	113.8
12	8:00 p.m.	132.0	22	7:00 a.m.	112.1
13	6:00 a.m.	115.7	23	7:00 a.m.	112.7
13	9:00 p.m.	134.1	23	7:30 p.m.	127.4
14	6:00 a.m.	116.1	25	6:30 a.m.	110.4
14	9:15 p.m.	135.5	25	6:45 p.m.	128.5
15	5:45 a.m.	116.9	26	8:00 a.m.	110.7
15	7:00 p.m.	134.8	26	5:30 p.m.	130.8
16	6:00 a.m.	116.1	27	8:00 a.m.	110.3
16	9:15 p.m.	135.3	27	6:45 p.m.	128.0
17	6:00 a.m.	116.6	28	8:00 a.m.	109.0
17	8:15 p.m.	135.4	28	6:30 p.m.	128.6
18	6:00 a.m.	116.7	29	7:30 a.m.	109.0
18	7:00 p.m.	135.0	29	6:45 p.m.	126.0
19	5:45 a.m.	117.1	30	8:00 a.m.	108.6
19	8:00 p.m.	135.9	30	5:30 p.m.	127.2
20	5:45 a.m.	116.1	Oct. 1	7:30 a.m.	109.0
20	7:00 p.m.	135.7	2	7:45 a.m.	108.9
21	5:45 a.m.	117.1	3	7:00 a.m.	108.7
21	7:00 p.m.	135.5	4	8:00 a.m.	108.8
22	5:45 a.m.	116.1	5	8:00 a.m.	108.8
22	8:00 p.m.	135.8	6	7:30 a.m.	108.1
23	6:00 a.m.	117.0	7	7:30 a.m.	109.0
23	7:00 p.m.	135.4	8	7:30 a.m.	109.2
24	6:15 a.m.	116.6	9	7:30 a.m.	109.5

Water levels in wells in Howard County--Continued

10. City of Big Spring well 51.--Continued

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
Oct. 10, 1936	6:30 a.m.	109.0	Nov. 21, 1936	7:00 a.m.	109.4
11	8:00 a.m.	110.0	22	8:00 a.m.	109.3
12	6:30 a.m.	109.0	23	8:15 a.m.	109.3
14	7:45 a.m.	109.0	24	7:45 a.m.	109.0
15	7:00 a.m.	109.0	25	7:30 a.m.	109.3
16	12:30 p.m.	109.3	26	7:30 a.m.	109.6
17	12:05 p.m.	109.0	27	7:30 a.m.	109.0
18	7:45 a.m.	109.0	28	7:00 a.m.	109.0
19	12:00 a.m.	108.6	29	7:30 a.m.	109.0
20	8:00 a.m.	109.0	30	7:30 a.m.	108.1
21	1:00 p.m.	109.0	Dec. 1	8:00 a.m.	108.1
22	12:45 p.m.	109.0	2	8:00 a.m.	108.1
23	10:30 a.m.	109.0	3	7:45 a.m.	108.1
24	10:00 a.m.	109.3	4	8:00 a.m.	108.1
25	9:15 a.m.	109.0	5	8:00 a.m.	108.1
26	9:45 a.m.	108.1	6	8:00 a.m.	108.1
27	8:00 a.m.	109.0	7	8:00 a.m.	108.9
28	7:00 a.m.	109.0	8	8:00 a.m.	109.6
29	7:45 a.m.	108.7	9	8:00 a.m.	109.6
30	8:00 a.m.	109.2	10	8:00 a.m.	110.2
31	8:15 a.m.	108.1	11	7:30 a.m.	109.4
Nov. 1	8:15 a.m.	109.3	12	7:30 a.m.	109.9
2	7:45 a.m.	109.0	13	8:00 a.m.	110.0
3	7:50 a.m.	109.7	14	7:30 a.m.	109.5
4	8:15 a.m.	109.0	15	8:00 a.m.	109.9
5	8:50 a.m.	108.1	16	7:30 a.m.	109.5
6	8:00 a.m.	109.8	17	7:00 a.m.	109.2
7	8:00 a.m.	109.8	18	7:00 a.m.	109.9
8	8:15 a.m.	109.1	19	7:30 a.m.	109.1
9	8:15 a.m.	109.0	20	8:00 a.m.	109.3
10	8:00 a.m.	109.0	21	7:30 a.m.	109.2
11	8:00 a.m.	109.2	22	7:45 a.m.	109.4
12	8:00 a.m.	108.0	23	7:45 a.m.	109.8
13	8:00 a.m.	109.9	24	7:30 a.m.	102.8
14	8:00 a.m.	109.6	25	8:00 a.m.	109.0
15	8:00 a.m.	109.6	26	6:00 a.m.	109.0
16	8:00 a.m.	109.3	29	7:45 a.m.	108.4
17	7:45 a.m.	108.9	30	7:30 a.m.	109.0
18	8:00 a.m.	109.7	31	7:45 a.m.	109.0
19	7:50 a.m.	109.9			
20	7:50 a.m.	109.4			

11. City of Big Spring well 65. Five miles southeast of Big Spring. Measuring point, top of 8-inch casing in concrete slab, 1.5 feet above land surface. Nearest pumping well is 54, 400 feet west.

June 24, 1935	5:30 a.m.	112.4	July 5, 1935	9:50 p.m.	130.8
24	1:50 p.m.	131.1	6	5:10 a.m.	119.1
25	5:31 a.m.	112.4	6	9:40 p.m.	132.1
25	5:44 p.m.	132.1	7	5:13 a.m.	119.6
26	5:50 a.m.	114.3	8	5:10 a.m.	115.9
26	4:21 p.m.	132.2	8	10:36 p.m.	128.9
27	5:25 a.m.	114.6	9	5:13 a.m.	119.5
27	8:27 p.m.	124.7	9	9:49 p.m.	128.9
28	5:56 a.m.	115.1	10	5:23 a.m.	119.9
28	9:06 p.m.	131.3	11	5:14 a.m.	121.7
29	5:27 a.m.	117.3	11	9:35 p.m.	135.2
July 1	5:25 a.m.	115.2	Aug. 6	5:45 a.m.	116.1
1	9:00 p.m.	131.8	6	10:09 p.m.	135.1
2	5:32 a.m.	117.4	7	5:35 a.m.	120.2
2	9:01 p.m.	131.8	7	10:36 p.m.	135.1
3	5:19 a.m.	118.0	8	5:29 a.m.	121.6
3	7:09 p.m.	128.8	9	5:31 a.m.	119.1
4	5:08 a.m.	117.5	9	6:14 p.m.	136.4
4	6:58 p.m.	133.7	10	6:46 a.m.	139.6
5	5:25 a.m.	117.5	10	6:05 p.m.	140.0

Water levels in wells in Howard County--Continued

11. City of Big Spring well 65.--Continued

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
Aug. 11, 1935	5:35 a.m.	124.2	Aug. 4, 1936	5:45 a.m.	127.6
11	7:10 p.m.	141.8	4	9:00 p.m.	148.8
12	5:43 a.m.	122.1	5	5:45 a.m.	128.7
12	9:05 p.m.	143.7	5	8:45 p.m.	149.3
Sept. 1	6:03 a.m.	117.5	6	5:30 a.m.	128.1
2	6:25 a.m.	116.6	6	9:15 p.m.	150.0
3	6:21 a.m.	114.8	7	5:45 a.m.	129.4
4	6:06 a.m.	117.1	7	8:45 p.m.	143.3
5	6:11 a.m.	115.8	8	5:45 a.m.	129.5
6	6:14 a.m.	114.6	8	8:00 p.m.	148.3
7	5:55 a.m.	115.1	9	6:00 a.m.	129.1
8	6:21 a.m.	115.5	9	5:00 p.m.	140.1
9	6:21 a.m.	116.2	10	5:45 a.m.	127.8
10	5:58 a.m.	116.8	10	7:00 p.m.	147.0
11	5:50 a.m.	116.2	11	5:45 a.m.	127.6
11	4:05 p.m.	137.3	11	7:00 p.m.	143.5
12	6:12 a.m.	116.9	12	6:00 a.m.	127.8
12	4:53 p.m.	138.2	12	8:00 p.m.	149.5
13	6:16 a.m.	117.6	13	6:00 a.m.	128.1
Feb. 12, 1936	11:00 a.m.	130.8	13	9:00 p.m.	149.6
May 1	.....	124.9	14	6:00 a.m.	129.3
6	3:20 p.m.	137.1	14	9:15 p.m.	150.0
7	10:40 p.m.	124.9	15	5:45 a.m.	130.0
29	3:20 p.m.	137.1	15	7:00 p.m.	149.8
June 17	8:25 a.m.	130.4	16	6:00 a.m.	130.0
19	8:00 a.m.	131.7	16	9:15 p.m.	146.8
23	9:50 a.m.	130.7	17	6:00 a.m.	130.0
25	10:40 a.m.	138.7	17	8:15 p.m.	148.1
July 8	1:50 p.m.	120.7	18	6:00 a.m.	130.2
10	9:35 a.m.	121.1	18	9:30 p.m.	144.0
16	6:00 a.m.	125.1	19	5:45 a.m.	130.6
16	8:00 p.m.	147.9	19	8:00 p.m.	149.0
17	6:00 a.m.	125.1	20	5:45 a.m.	130.2
17	11:30 a.m.	137.2	20	9:00 p.m.	143.0
17	8:00 p.m.	143.0	21	5:45 a.m.	130.6
18	6:00 a.m.	125.6	21	7:30 p.m.	149.3
18	8:00 p.m.	138.1	22	5:45 a.m.	130.5
19	6:00 a.m.	126.5	22	8:00 p.m.	150.2
19	8:00 p.m.	146.9	23	6:00 a.m.	130.4
20	6:00 a.m.	126.1	23	7:00 p.m.	143.1
20	8:00 p.m.	145.7	24	6:15 a.m.	129.1
21	6:00 a.m.	127.3	24	6:00 p.m.	149.9
21	10:40 a.m.	141.4	25	6:00 a.m.	129.5
21	7:30 p.m.	146.0	25	8:30 p.m.	145.3
22	6:00 a.m.	127.0	26	8:00 p.m.	150.1
22	5:00 a.m.	140.1	27	6:00 a.m.	130.8
23	6:00 a.m.	125.6	27	8:15 p.m.	150.5
23	5:00 p.m.	142.9	28	6:00 a.m.	130.2
24	6:00 a.m.	124.1	28	9:30 p.m.	145.1
24	7:00 p.m.	145.6	29	6:00 a.m.	130.1
25	6:00 a.m.	125.6	30	6:00 a.m.	129.6
25	6:15 p.m.	136.6	30	1:00 p.m.	140.1
26	6:30 a.m.	124.3	31	6:00 a.m.	126.1
26	6:15 p.m.	138.0	31	3:15 p.m.	138.1
27	6:00 a.m.	125.0	Sept. 1	6:00 a.m.	126.5
27	8:00 p.m.	139.2	1	7:30 p.m.	140.0
28	6:00 a.m.	126.1	2	6:00 a.m.	127.1
28	9:50 p.m.	147.1	2	7:00 a.m.	140.6
29	6:00 a.m.	127.9	3	6:15 a.m.	128.4
29	7:40 p.m.	148.4	4	6:00 a.m.	127.4
30	6:00 a.m.	128.4	4	6:30 p.m.	159.6
30	6:00 p.m.	145.6	5	6:30 a.m.	122.7
31	4:30 a.m.	127.7	5	6:15 p.m.	139.0
31	6:15 p.m.	140.6	6	7:00 a.m.	127.3
Aug. 1	5:15 a.m.	127.4	6	7:00 p.m.	140.0
1	7:00 p.m.	141.1	7	6:20 a.m.	128.1
2	6:00 a.m.	127.3	8	6:30 a.m.	126.7
2	4:30 p.m.	140.5	8	10:05 a.m.	136.0
3	5:45 a.m.	125.1	8	7:00 p.m.	139.8
3	8:45 p.m.	140.2	9	6:30 a.m.	127.1

Water levels in wells in Howard County--Continued

11. City of Big Spring well 65.--Continued

Date	Time	Depth to water level (feet)	Date	Time	Depth to water level (feet)
Sept. 11, 1936	6:30 a.m.	123.9	Nov. 2, 1936	7:45 a.m.	121.9
11	7:15 p.m.	137.9	3	7:30 a.m.	122.1
12	6:15 a.m.	126.6	4	8:15 a.m.	121.1
12	7:00 p.m.	139.5	5	8:30 a.m.	121.5
13	6:00 a.m.	127.5	6	8:00 a.m.	122.4
14	6:30 a.m.	127.9	7	8:00 a.m.	122.7
15	6:30 a.m.	129.0	8	8:15 a.m.	122.6
15	6:15 p.m.	148.1	9	8:15 a.m.	121.5
16	6:00 a.m.	129.2	10	8:00 a.m.	121.6
20	7:00 a.m.	128.0	11	8:00 a.m.	121.8
20	3:00 p.m.	136.6	12	8:00 a.m.	121.4
21	6:15 a.m.	126.0	13	8:00 a.m.	122.9
22	7:00 a.m.	124.5	14	8:00 a.m.	121.1
23	7:00 a.m.	125.6	15	8:00 a.m.	122.0
23	7:30 p.m.	135.6	16	8:00 a.m.	121.9
25	6:30 a.m.	123.0	17	7:45 a.m.	121.2
25	6:45 p.m.	131.1	18	8:00 a.m.	122.4
26	8:00 a.m.	124.1	19	7:30 a.m.	122.8
26	5:30 p.m.	133.6	20	7:30 a.m.	122.3
27	8:00 a.m.	124.9	21	7:00 a.m.	122.0
27	6:45 p.m.	132.1	22	8:00 a.m.	122.2
28	8:00 a.m.	123.9	23	8:15 a.m.	121.1
28	6:30 p.m.	139.2	24	7:45 a.m.	121.8
29	7:30 a.m.	124.0	25	7:30 a.m.	122.1
29	6:45 p.m.	138.4	26	7:30 a.m.	122.3
30	8:00 a.m.	123.6	27	7:30 a.m.	121.7
30	5:30 p.m.	139.0	28	7:00 a.m.	121.7
Oct. 1	7:30 a.m.	123.8	29	7:30 a.m.	121.1
2	7:45 a.m.	123.4	30	7:30 a.m.	121.4
3	7:00 a.m.	123.2	Dec. 1	8:00 a.m.	121.5
4	8:00 a.m.	123.3	2	8:00 a.m.	121.3
5	8:00 a.m.	122.8	3	7:45 a.m.	121.5
6	7:30 a.m.	122.7	4	8:00 a.m.	121.6
7	7:30 a.m.	122.1	5	8:00 a.m.	121.4
8	7:30 a.m.	122.7	6	8:00 a.m.	121.4
9	7:30 a.m.	122.9	7	8:00 a.m.	121.4
10	6:30 a.m.	121.1	8	8:00 a.m.	122.4
11	8:00 a.m.	123.8	9	8:00 a.m.	122.1
12	6:30 a.m.	122.1	10	8:00 a.m.	123.0
13	12:05 p.m.	121.1	11	7:30 a.m.	122.0
14	7:45 a.m.	122.0	12	7:30 a.m.	122.7
15	7:00 a.m.	121.6	13	8:00 a.m.	122.5
16	12:30 a.m.	122.1	14	7:30 a.m.	121.1
17	12:00 a.m.	122.0	15	8:00 a.m.	122.6
18	7:45 a.m.	121.1	16	7:30 a.m.	122.0
19	12:10 p.m.	120.1	17	7:00 a.m.	122.1
20	8:00 a.m.	122.2	18	7:00 a.m.	122.8
21	1:00 p.m.	122.1	19	7:30 a.m.	122.1
22	12:45 p.m.	121.7	20	8:00 a.m.	121.1
23	10:30 a.m.	121.4	21	7:30 a.m.	122.0
24	10:00 a.m.	121.1	22	7:45 a.m.	122.4
25	9:15 a.m.	121.7	23	7:45 a.m.	122.8
26	9:45 a.m.	121.6	24	7:30 a.m.	122.5
27	8:00 a.m.	121.8	25	8:00 a.m.	121.7
28	7:00 a.m.	121.8	26	6:00 a.m.	121.6
29	7:45 a.m.	121.4	29	7:45 a.m.	120.6
30	8:00 a.m.	122.3	30	7:30 a.m.	121.7
31	8:15 a.m.	121.6	31	7:45 a.m.	121.7
Nov. 1	8:15 a.m.	122.3			

El Paso County

In July 1935 a study of the ground-water resources in the vicinity of El Paso, Tex., was begun by the United States Geological Survey in cooperation with the city of El Paso through the Texas Board of Water Engineers. Penn Livingston and A. N. Sayre were assigned to this investigation, working under the general direction of O. E. Meinzer and W. N. White, of the division of ground water, United States Geological Survey.

The water supply for the cities of El Paso and Juarez, and several private industries is pumped from wells that penetrate a series of sands and clays. A part of the water is pumped from wells in the valley of the Rio Grande and a part is pumped from wells on the mesa. The water in beds that underlie the mesa, from about 200 to 880 feet beneath the surface, is potable. The water from some of the beds under the valley is potable, but that from many of the beds is highly mineralized. The lowering of the fresh-water level in the wells in the valley by pumping and the attendant danger of contamination of the fresh-water supply by the highly mineralized water led to the cooperative study of the ground-water supply in the area. During the investigation monthly measurements were made of the depths to water level in about 35 observation wells, and in addition water-stage recorders were maintained for varying lengths of time on wells 37, 41, 51, and 52. Water-level measurements in about 40 wells in which only one measurement was made are not included in this report.

The accompanying table gives 3 water-level measurements made in 1934, 239 measurements made in 1935 and 343 measurements made in 1936.

Frequent determinations were made of the altitude of the water surface in wells 77, 112, 114, 119, and 120 during the period December 16-26, 1935, for the purpose of estimating the permeability of the formation supplying the mesa wells. Well 78 was pumped at the rate of about 2.2 million gallons a day, beginning at 10:00 a.m. on December 16. The distances of the observation wells from it were as follows: well 77, 2,332 feet; well 112, 1,330 feet; well 114, 1,008 feet; well 120, 474 feet; well 119, 150 feet. The well numbers in the following table correspond to the numbers that will appear in the table of well records in the report on the ground-water resources, now in preparation. The periodic observations of the water level in the following wells are being continued to serve as a guide for the proper development of the ground-water supply in this area.

Water levels in wells in El Paso County, Texas

(Water levels are given in feet above mean sea level)

6. El Paso Electric Co. well 2, Santa Fe and 4th Streets. Diameter 16 inches, depth 252 feet. Measuring point, bottom of steel pump base, 0.6 foot below land surface and 3,708.69 feet above mean sea level. Water level Aug. 20, 1935, 6.73 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 20, 1935	3,701.96	Apr. 8, 1936	3,696.34	Sept. 14, 1936	3,700.47
Dec. 11	3,700.97	May 15	3,699.60	Oct. 19	3,700.73
Jan. 13, 1936	3,700.83	June 11	3,700.61	Nov. 9	3,700.58
Feb. 13	3,700.96	July 13	3,699.88	Dec. 17	3,695.41
Mar. 16	3,695.62	Aug. 17	3,700.63		

7. El Paso Electric Co. well 1, Santa Fe and 4th Streets. Depth 229 feet. Measuring point, top of steel pump base, 0.5 foot above land surface and 3,710.09 feet above mean sea level. Water level Aug. 20, 1935, 8.26 feet below measuring point.

Aug. 20, 1935	3,701.83	Apr. 8, 1936	3,695.61	Aug. 17, 1936	3,699.68
Dec. 11	3,700.83	May 15	3,699.40	Sept. 14	3,699.04
Jan. 13, 1936	3,700.69	June 11	3,700.32	Oct. 19	3,700.18
Feb. 13	3,700.71	July 13	3,699.00	Nov. 9	3,700.07
Mar. 16	3,695.07				

8. El Paso Electric Co. well 4, Santa Fe and 4th Streets. Diameter 10 inches, depth 394 feet. Measuring point, top of casing, 0.3 feet above land surface and 3,708.62 feet above mean sea level. Water level Mar. 16, 1936, 18.61 feet below measuring point.

Mar. 16, 1936	3,690.01	June 11, 1936	3,695.33	Sept. 14, 1936	3,693.81
Apr. 8	3,692.40	July 13	3,692.90	Dec. 17	3,689.25
May 15	3,695.14	Aug. 17	3,696.57		

9. El Paso Electric Co. well 3, Santa Fe and 4th Streets. Diameter 10 inches, depth 304 feet. Measuring point, top of steel pump base, 0.2 feet above land surface and 3,710.06 feet above mean sea level. Water level Aug. 20, 1935, 9.77 feet below measuring point.

Aug. 20, 1935	3,700.29	Apr. 8, 1936	3,693.83	Aug. 17, 1936	3,697.87
Dec. 11	3,699.41	May 15	3,698.01	Oct. 19	3,698.71
Jan. 13, 1936	3,699.23	June 11	3,699.29	Nov. 9	3,699.01
Feb. 13	3,699.29	July 13	3,697.65	Dec. 17	3,696.98
Mar. 16	3,694.03				

12. City of Juarez well 1, municipal market. Diameter 10 inches, depth 499 feet. Measuring point, top of steel pump base, flush with land surface and 3,726.70 feet above mean sea level. Water level Aug. 22, 1935, 32.28 feet below measuring point. Altitude of water level, Aug. 22, 1935, 3,694.42 feet; Aug. 23, 1935, 3,694.98 feet; Dec. 10, 1935, 3,694.90 feet.

13. City of Juarez well 2, Mariscal and Primera Streets. Diameter 12 inches, depth 480 feet. Measuring point, top of steel pump base, 0.6 foot above land surface and 3,755.83 feet above mean sea level. Water level Aug. 27, 1935, 62.39 feet below measuring point. Altitude of water level, Aug. 27, 1935, 3,693.44 feet; Dec. 11, 1935, 3,693.07 feet.

18. City of Juarez well 3, near Hipodromo. Depth 660 feet. Measuring point, top of steel pump base, 0.5 feet above land surface and 3,703.36 feet above mean sea level. Water level Aug. 24, 1935, 11.64 feet below measuring point. Altitude of water level, Aug. 24, 1935, 3,691.72 feet; Dec. 10, 1935, 3,691.78 feet; Dec. 11, 1935, 3,691.51 feet.

Water levels in wells in El Paso County, Texas--Continued

19. El Paso Milling Co., Kansas and 11th Streets. Diameter 10 inches, depth 400 feet. Measuring point, top of casing, 14.6 feet above land surface and 3,721.67 feet above mean sea level. Water level Aug. 23, 1935, 27.19 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 23, 1935	3,694.48	Mar. 16, 1936	3,693.17	Aug. 17, 1936	3,683.89
Oct. 25	3,692.92	Apr. 8	3,693.18	Sept. 14	3,692.88
Dec. 13	3,694.59	May 18	3,691.57	Oct. 19	3,693.86
Jan. 13, 1936	3,694.75	June 12	3,692.86	Nov. 9	3,693.95
Feb. 13	3,693.09	July 14	3,681.91		

21. City of El Paso well 10, Campbell and 6th Streets. Depth 807 feet. Measuring point, floor of pump house, 1.5 feet above land surface and 3,707.35 feet above mean sea level. Water level Dec. 22, 1934, 18.07 feet below measuring point.

Dec. 22, 1934	3,689.28	Mar. 16, 1936	3,687.99	Sept. 14, 1936	3,681.71
Sept. 11, 1935	3,688.55	Apr. 8	3,687.80	Oct. 20	3,685.71
Dec. 11	3,688.15	May 15	3,687.31	Nov. 9	3,686.34
Jan. 13, 1936	3,688.97	June 10	3,687.00	Dec. 17	3,686.07
Feb. 13	3,688.73				

22. City of El Paso well 6, 2d and Cotton Streets. Diameter 15 inches, depth 646 feet. Measuring point, top of steel pump base, 0.1 foot above land surface and 3,704.47 feet above mean sea level. Water level Dec. 22, 1934, 16.30 feet below measuring point.

Dec. 22, 1934	3,688.17	Jan. 13, 1936	3,690.08	July 13, 1936	3,685.70
Aug. 19, 1935	3,685.40	Feb. 13	3,690.06	Sept. 14	3,687.15
Sept. 11	3,687.88	Mar. 16	3,687.36	Nov. 9	3,688.32
Nov. 5	3,689.55	Apr. 8	3,687.85	Dec. 14	3,688.29
Dec. 11	3,689.92	June 11	3,686.49		

28. Acme Laundry, 905 E. Missouri Street. Diameter 10 and 6 inches, depth 645 feet. Measuring point, top of steel pump base, 2.0 feet above land surface and 3,725.62 feet above mean sea level. Water level Aug. 17, 1935, 50.50 feet below measuring point.

Aug. 17, 1935	3,675.12	June 14, 1936	3,672.55	Sept. 13, 1936	3,662.00
Feb. 16, 1936	3,674.40	July 12	3,648.81	Oct. 18	3,671.03
Mar. 15	3,673.14	14	3,648.87	Nov. 8	3,671.79
Apr. 19	3,673.44	Aug. 16	3,647.21	Dec. 13	3,673.85
May 17	3,672.76				

33. El Paso Foundry & Machine Co., Williams Street at International Boundary. Diameter 8 and 3½ inches, depth 650 feet. Measuring point, top of air line, 5.0 feet above land surface and 3,704.72 feet above mean sea level. Water level Oct. 25, 1935, 14.40 feet below measuring point.

Oct. 25, 1935	3,690.32	Mar. 16, 1936	3,690.57	July 17, 1936	3,689.71
Dec. 11	3,694.83	Apr. 8	3,690.76	Aug. 17	3,688.85
Jan. 13, 1936	3,694.97	May 18	3,690.08	Sept. 14	3,689.62
Feb. 13	3,694.97	June 11	3,689.95	Oct. 19	3,689.69

Water levels in wells in El Paso County, Texas--Continued

36. Southern Pacific Ry., Piedras Street Shops. Diameter 13, 10, 8 and 6 inches, depth 896 feet. Measuring point, floor of pump house, 0.5 foot above land surface and 3,703.95 feet above mean sea level. Water level Aug. 17, 1935, 16.50 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 17, 1935	3,687.45	Apr. 8, 1936	3,689.05	Sept. 14, 1936	3,688.13
Dec. 12	3,691.35	May 15	3,688.37	Oct. 19	3,688.35
Jan. 13, 1936	3,691.45	June 12	3,687.75	Nov. 9	3,688.30
Feb. 13	3,691.47	July 13	3,687.33	Dec. 14	3,688.58
Mar. 16	3,689.26	Aug. 17	3,687.08		

37. Southern Pacific Ry., Piedras Street Shops. Diameter 14, 10 and 8 inches, depth 887 feet. Measuring point, floor of pump house, flush with land surface and 3,703.95 feet above mean sea level. Water level, Aug. 17, 1935, 34.59 feet below measuring point.

Aug. 17, 1935	3,669.36	Sept. 17, 1935	3,682.73	Oct. 19, 1935	3,686.97
Sept. 10	3,682.57	28	3,684.22	26	3,687.12
12	3,683.09	Oct. 5	3,685.50	Nov. 9	3,687.65
14	3,683.42	12	3,686.37	23	3,687.95

39. Midwest Dairies Inc., Piedras and Oro Streets. Depth 542 feet. Measuring point, top of steel pump base, 1.0 foot above land surface and 3,710.24 feet above mean sea level. Water level, Aug. 26, 1935, 35.71 feet below measuring point.

Aug. 26, 1935	3,674.53	Mar. 16, 1936	3,674.14	Aug. 18, 1936	3,671.44
Oct. 10	3,675.90	Apr. 8	3,674.79	Sept. 14	3,675.83
Dec. 12	3,676.16	May 14	3,672.47	Oct. 19	3,675.78
Jan. 13, 1936	3,675.92	June 11	3,670.41	Nov. 9	3,676.56
Feb. 13	3,675.42	July 13	3,671.37	Dec. 14	3,677.56

40. City of El Paso, Piedras and Hamilton Streets. Diameter 5 inches, depth 500 feet. Measuring point, top of casing, 1.5 feet above land surface and 3,997.29 feet above mean sea level. Water level, Nov. 20, 1935, 305.22 feet below measuring point.

Nov. 20, 1935	3,692.07	Jan. 14, 1936	3,692.95	Mar. 16, 1936	3,691.96
Dec. 12	3,692.78	Feb. 14	3,693.00	Apr. 9	3,691.83

41. City of El Paso well 5, Morenci and Grama Streets. Diameter 18, 12 $\frac{1}{2}$, 12 and 11 $\frac{1}{2}$ inches, depth 954 feet. Measuring point, floor of pump house, 3 feet above land surface and 3,779.74 feet above mean sea level. Water level, Sept. 11, 1935, 109.52 feet below measuring point. After Mar. 3, 1936, water levels obtained from measurements and from water-stage recorder charts.

Sept. 11, 1935	3,670.22	Apr. 29, 1936	3,670.44	Sept. 14, 1936	3,672.75
Dec. 12	3,671.77	May 9	3,668.10	19	3,671.94
Jan. 2, 1936	3,671.57	28	3,666.18	27	3,671.89
14	3,671.24	June 16	3,665.12	Oct. 5	3,675.07
Feb. 13	3,670.96	July 3	3,663.75	14	3,673.09
Mar. 3	3,669.93	11	3,663.91	19	3,672.89
11	3,669.20	14	3,666.77	21	3,672.74
14	3,669.43	26	3,668.84	23	3,671.78
26	3,670.15	Aug. 2	3,667.34	Nov. 9	3,672.07
Apr. 1	3,671.27	15	3,668.89	Dec. 14	3,674.95
10	3,670.54	22	3,669.62		

Water levels in wells in El Paso County, Texas--Continued

42. City of El Paso well 9, Luna and Pera Streets. Diameter 15 and 12½ inches, depth 802 feet. Measuring point, floor of pump house, flush with land surface and 3,700.27 feet above mean sea level. Water level, Dec. 22, 1934, 21.11 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 22, 1934	3,679.16	Feb. 13, 1936	3,675.89	Sept. 14, 1936	3,677.52
Sept. 11, 1935	3,675.33	Mar. 16	3,674.33	Oct. 19	3,677.56
Nov. 6	3,676.41	Apr. 8	3,675.69	Nov. 9	3,675.87
Dec. 11	3,676.70	Aug. 17	3,674.89	Dec. 14	3,676.93
Jan. 13, 1936	3,676.24				

43. Camp Grange, Stevens Avenue and Frutas Streets. Diameter 6 inches, depth 90 feet. Measuring point, top of casing, 9.0 feet below land surface and 3,694.10 feet above mean sea level. Water level, Aug. 27, 1935, 5.55 feet below measuring point.

Aug. 27, 1935	3,688.55	Feb. 13, 1936	3,689.62	May 18, 1936	3,689.03
Dec. 12	3,689.67	Mar. 16	3,689.47	June 11	3,689.09
Jan. 13, 1936	3,689.49	Apr. 8	3,689.27	July 13	3,688.61

44. Harry Mitchell Brewing Co., Travis and Frutas Streets. Diameter 12 to 10 inches, depth 353 feet. Measuring point, top of steel pump base, 0.2 foot above land surface and 3,701.44 feet above mean sea level. Water level, Dec. 13, 1935, 25.42 feet below measuring point.

Dec. 13, 1935	3,676.02	May 16, 1936	3,672.04	Sept. 15, 1936	3,674.46
Feb. 14, 1936	3,675.10	June 12	3,672.23	Oct. 20	3,674.49
Mar. 17	3,674.29	July 15	3,670.86	Nov. 10	3,675.41
Apr. 9	3,674.52	Aug. 18	3,672.13	Dec. 15	3,679.50

51. City of El Paso well 2, Montana well field. Diameter 20, 15½ and 12 inches, depth 840 feet. Measuring point, floor of pump house, 1 foot above land surface and 3,772.37 feet above mean sea level. Water level, June 13, 1936, 113.80 feet below measuring point. Water levels obtained from measurements and from water-stage recorder charts.

June 13, 1936	3,658.57	Aug. 7, 1936	3,660.55	Oct. 15, 1936	3,664.32
22	3,658.27	22	3,664.14	20	3,663.42
29	3,658.11	24	3,666.06	21	3,663.31
July 3	3,651.97	29	3,662.98	23	3,658.85
10	3,651.57	Sept. 15	3,663.08	31	3,661.21
13	3,667.29	27	3,663.02	Nov. 9	3,661.14
18	3,660.13	Oct. 5	3,669.48	Dec. 14	3,668.33
Aug. 1	3,653.92				

52. City of El Paso well 3, Montana well field. Diameter 26 and 12 inches, depth 862 feet. Measuring point, floor of pump house, 3 feet above land surface and 3,783.20 feet above mean sea level. Water level, Sept. 12, 1935, 99.00 feet below measuring point. Water levels obtained from measurements and from water-stage recorder charts.

Sept. 12, 1935	3,684.20	Mar. 14, 1936	3,683.89	June 16, 1936	3,664.14
Oct. 12	3,684.18	Apr. 11	3,683.87	20	3,664.93
Nov. 9	3,684.18	25	3,683.96	24	3,663.79
Dec. 14	3,684.17	June 12	3,684.30	29	3,662.63
Jan. 11, 1936	3,684.13	13	3,664.22	Dec. 14	3,670.61
Feb. 15	3,684.01				

Water levels in wells in El Paso County, Texas--Continued

53. Loretto College, Clifton and Reynolds Streets. Diameter 7 inches. Measuring point, top of eduction pipe, 3 feet above land surface and 3,811.25 feet above mean sea level. Water level, Nov. 11, 1935, 149.91 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 11, 1935	3,661.34	Apr. 18, 1936	3,660.07	Sept. 14, 1936	3,659.79
Dec. 12	3,661.75	May 14	3,658.74	Oct. 20	3,660.21
Jan. 14, 1936	3,661.45	June 12	3,656.91	Nov. 9	3,669.64
Feb. 13	3,660.72	July 14	3,660.25	Dec. 19	3,671.90
Mar. 16	3,659.53	Aug. 17	3,657.06		

55. Texas Company, 0.6 miles northeast from Ascarate. Depth 694 feet. Measuring point, top of steel pump base, 2 feet above land surface and 3,717.87 feet above mean sea level. Water level, Aug. 29, 1935, 45.28 feet below measuring point.

Aug. 29, 1935	3,672.59	May 16, 1936	3,671.86	Sept. 15, 1936	3,670.95
Dec. 13	3,673.46	June 12	3,670.28	Oct. 20	3,671.01
Feb. 14, 1936	3,671.97	July 15	3,670.03	Nov. 10	3,670.34
Mar. 17	3,672.94	Aug. 18	3,670.42	Dec. 15	3,671.85
Apr. 9	3,673.71				

60. Sambrano Waterworks, Ascarate. Diameter 6 inches, depth 140 feet. Measuring point, top of casing, flush with land surface and 3,691.37 feet above mean sea level. Water level, Aug. 29, 1935, 5.35 feet below measuring point.

Aug. 29, 1935	3,686.02	Mar. 16, 1936	3,685.06	Aug. 15, 1936	3,684.69
Nov. 6	3,685.33	Apr. 8	3,685.04	Sept. 14	3,684.76
Dec. 12	3,685.07	May 14	3,685.05	Oct. 19	3,684.77
Jan. 14, 1936	3,684.87	June 11	3,685.04	Nov. 9	3,684.86
Feb. 13	3,684.81	July 13	3,684.84	Dec. 14	3,684.84

64. City of El Paso and United States Geological Survey test well 1, Carlsbad Highway. Diameter 2 inches, depth 600 feet. Measuring point, top of pipe, flush with land surface and 3,942.88 feet above mean sea level. Water level, July 17, 1936, 260.56 feet below measuring point.

July 17, 1936	3,682.32	Sept. 15, 1936	3,682.67	Nov. 10, 1936	3,682.06
24	3,682.34	Oct. 20	3,682.41	Dec. 20	3,682.12
Aug. 15	3,682.34				

67. Southern Pacific Ry., near south entrance to Fort Bliss. Diameter 12 inches, depth 869 feet. Measuring point, top of eduction pipe, 10 feet above land surface and 3,897.41 feet above mean sea level. Water level, Nov. 20, 1935, 227.51 feet below measuring point.

Nov. 20, 1935	3,669.90	June 13, 1936	3,666.53	Sept. 15, 1936	3,667.90
Dec. 13	3,671.15	July 15	3,665.81	Nov. 10	3,670.04
May 16, 1936	3,667.51	Aug. 18	3,664.25		

72. United States War Dept., Fort Bliss pumping plant 2. Diameter 10 inches, depth 652 feet. Measuring point, top of tank, 14 feet above land surface and 3,898.14 feet above mean sea level. Water level, Nov. 20, 1935, 230.65 feet below measuring point.

Nov. 20, 1935	3,667.49	Apr. 8, 1936	3,668.31	Aug. 18, 1936	3,654.70
Dec. 13	3,671.18	May 15	3,659.99	Oct. 20	3,667.58
Jan. 14, 1936	3,670.85	June 12	3,653.88	Nov. 10	3,668.35
Mar. 16	3,667.10	July 19	3,657.67	Dec. 19	3,665.84

Water levels in wells in El Paso County, Texas--Continued

76. City of El Paso and United States Geological Survey test well 2, southeast corner Biggs Field. Diameter 6 inches, depth 600 feet. Measuring point, top of pipe, flush with land surface and 3,919.40 feet above mean sea level. Water level, July 17, 1936, 244.12 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 17, 1936	3,675.28	Sept. 15, 1936	3,677.96	Nov. 10, 1936	3,679.35
24	3,675.51	Oct. 20	3,678.86	Dec. 20	3,679.93
Aug. 17	3,676.51				

77. City of El Paso well 12, mesa well field. Diameter 12 inches, depth 776 feet. Measuring point, floor of pump house, 3 feet above land surface and 3,882.52 feet above mean sea level. Water level, Dec. 14, 1935, 201.51 feet below measuring point.

Date	Hour	Water level (feet)	Date	Hour	Water level (feet)
Dec. 14, 1935	.....	3,681.01	Dec. 17, 1935	10:55 a.m.	3,678.28
16	9:21 a.m.	3,681.06	19	1:30 p.m.	3,676.65
16	10:40 a.m.	3,681.00	23	1:30 p.m.	3,675.98
16	11:42 a.m.	3,680.85	26	4:35 p.m.	3,678.28
16	12:22 p.m.	3,680.72	Feb. 14, 1936	.....	3,675.30
16	1:06 p.m.	3,680.55	Mar. 16	.....	3,671.94
16	2:10 p.m.	3,680.37	Apr. 9	.....	3,672.42
16	3:23 p.m.	3,680.13	May 15	.....	3,671.03
16	4:54 p.m.	3,679.91	Nov. 10	.....	3,676.80
16	5:13 p.m.	3,679.86	Dec. 20	.....	3,677.42

112. City of El Paso, old mesa well field well 32. Diameter 8 inches, depth 606 feet. Measuring point, center of flange coupling, 1.5 feet above land surface and 3,871.27 feet above mean sea level. Water level, Aug. 6, 1935, 200.74 feet below measuring point.

Aug. 6, 1935	.....	3,670.53	Dec. 16, 1935	2:10 p.m.	3,675.72
Sept. 11	.....	3,667.35	16	2:43 p.m.	3,675.59
Dec. 12	.....	3,676.57	16	3:10 p.m.	3,675.47
16	8:36 a.m.	3,676.97	16	3:35 p.m.	3,675.32
16	8:40 a.m.	3,677.02	16	4:17 p.m.	3,675.17
16	9:18 a.m.	3,676.99	16	4:38 p.m.	3,675.09
16	9:55 a.m.	3,677.03	16	4:57 p.m.	3,675.01
16	10:00 a.m.	3,677.03	17	9:15 a.m.	3,672.95
16	10:11 a.m.	3,677.03	18	5:00 p.m.	3,671.73
16	10:25 a.m.	3,676.98	19	2:15 p.m.	3,671.27
16	10:30 a.m.	3,676.96	23	1:30 p.m.	3,670.66
16	10:40 a.m.	3,676.87	24	2:30 p.m.	3,670.52
16	11:02 a.m.	3,676.73	25	12:00 noon	3,670.37
16	11:05 a.m.	3,676.70	Feb. 14, 1936	.....	3,669.93
16	11:21 a.m.	3,676.62	Mar. 16	.....	3,660.93
16	11:25 a.m.	3,676.60	Apr. 9	.....	3,663.83
16	11:35 a.m.	3,676.53	May 15	.....	3,659.33
16	11:38 a.m.	3,676.51	June 12	.....	3,657.77
16	12:05 p.m.	3,676.30	July 14	.....	3,666.82
16	12:13 p.m.	3,676.30	Aug. 18	.....	3,665.19
16	12:38 p.m.	3,676.19	Sept. 14	.....	3,666.31
16	12:41 p.m.	3,676.17	Oct. 20	.....	3,666.47
16	1:10 p.m.	3,676.02	Nov. 10	.....	3,667.01
16	1:40 p.m.	3,675.87	Dec. 19	.....	3,666.66
16	1:43 p.m.	3,675.85			

Water levels in wells in El Paso County, Texas--Continued

114. City of El Paso, old mesa field well 34. Diameter 10 inches, depth 598 feet. Measuring point, top of air line, 3 feet above land surface and 3,871.98 feet above mean sea level. Water level 9:50 a.m. Dec. 16, 1935, 194.45 feet below measuring point.

Date	Hour	Water level (feet)	Date	Hour	Water level (feet)
Dec. 16, 1935	9:50 a.m.	3,677.53	Dec. 16, 1935	2:04 p.m.	3,675.34
16	10:06 a.m.	3,677.53	16	2:37 p.m.	3,675.16
16	10:18 a.m.	3,677.43	16	3:03 p.m.	3,675.03
16	10:20 a.m.	3,677.40	16	3:29 p.m.	3,674.85
16	10:33 a.m.	3,677.34	16	4:25 p.m.	3,674.52
16	10:35 a.m.	3,677.32	16	4:49 p.m.	3,674.40
16	10:53 a.m.	3,676.89	16	4:52 p.m.	3,674.38
16	11:14 a.m.	3,676.73	16	5:04 p.m.	3,674.35
16	11:16 a.m.	3,676.70	17	9:10 a.m.	3,671.98
16	11:28 a.m.	3,676.58	17	4:55 p.m.	3,671.51
16	11:31 a.m.	3,676.56	18	5:00 p.m.	3,670.73
16	11:55 a.m.	3,676.31	19	2:05 p.m.	3,670.07
16	12:30 p.m.	3,676.01	23	1:30 p.m.	3,669.30
16	12:59 p.m.	3,675.78	24	2:30 p.m.	3,669.16
16	1:04 p.m.	3,675.76	25	12:00 noon	3,669.02
16	1:33 p.m.	3,675.53	Jan. 14, 1936	....	3,652.46

119. City of El Paso, old mesa well field well 39. Depth 590 feet. Measuring point, top of air line, 1 foot above land surface and 3,871.35 feet above mean sea level. Water level Dec. 14, 1935, 193.12 feet below measuring point.

Dec. 14, 1935	....	3,678.23	Dec. 16, 1935	1:41 p.m.	3,659.58
16	8:13 a.m.	3,678.40	16	1:59 p.m.	3,659.35
16	8:28 a.m.	3,678.40	16	2:14 p.m.	3,659.15
16	9:03 a.m.	3,678.42	16	2:29 p.m.	3,659.00
16	9:55 a.m.	3,678.38	16	2:44 p.m.	3,658.83
16	10:17 a.m.	3,666.85	16	3:15 p.m.	3,658.56
16	10:26 a.m.	3,665.15	16	3:30 p.m.	3,658.47
16	10:38 a.m.	3,664.41	16	3:51 p.m.	3,658.31
16	10:50 a.m.	3,663.54	16	4:10 p.m.	3,658.18
16	10:59 a.m.	3,663.05	16	5:02 p.m.	3,657.75
16	11:16 a.m.	3,662.31	16	5:19 p.m.	3,657.59
16	11:26 a.m.	3,661.95	16	5:30 p.m.	3,657.49
16	11:37 a.m.	3,661.65	17	9:35 a.m.	3,654.30
16	11:46 a.m.	3,661.42	17	4:46 p.m.	3,654.11
16	12:02 p.m.	3,661.00	18	5:00 p.m.	3,652.85
16	12:15 p.m.	3,660.77	19	1:45 p.m.	3,652.25
16	12:31 p.m.	3,660.48	23	1:30 p.m.	3,651.72
16	12:49 p.m.	3,660.22	24	2:30 p.m.	3,651.35
16	1:10 p.m.	3,659.95	25	12:00 noon	3,651.25
16	1:26 p.m.	3,659.80	Jan. 14, 1936	....	3,670.12

120. City of El Paso, old mesa well field well 40. Depth 595 feet. Measuring point, top of air line, 1 foot above land surface and 3,871.99 feet above mean sea level. Water level Dec. 14, 1935, 194.02 feet below measuring point.

Dec. 14, 1935	.....	3,677.97	Dec. 16, 1935	12:18 p.m.	3,673.56
16	8:22 a.m.	3,677.85	16	12:28 p.m.	3,673.35
16	8:43 a.m.	3,677.83	16	12:52 p.m.	3,673.06
16	9:17 a.m.	3,677.83	16	1:07 p.m.	3,672.91
16	9:45 a.m.	3,677.84	16	1:22 p.m.	3,672.74
16	10:21 a.m.	3,676.46	16	1:44 p.m.	3,672.53
16	10:31 a.m.	3,675.94	16	1:54 p.m.	3,672.42
16	10:42 a.m.	3,675.43	16	2:07 p.m.	3,672.31
16	10:55 a.m.	3,675.35	16	2:20 p.m.	3,672.19
16	11:10 a.m.	3,674.57	16	2:35 p.m.	3,672.07
16	11:20 a.m.	3,674.34	16	2:50 p.m.	3,671.94
16	11:33 a.m.	3,674.13	16	3:20 p.m.	3,671.73
16	11:41 a.m.	3,673.92	16	3:48 p.m.	3,671.53
16	11:58 a.m.	3,673.64	16	4:13 p.m.	3,671.37

Water levels in wells in El Paso County, Texas--Continued

120. City of El Paso.--Continued.

Date	Hour	Water level (feet)	Date	Hour	Water level (feet)
Dec. 16, 1935	5:05 p.m.	3,671.07	Dec. 21, 1935	3:30 p.m.	3,665.68
16	5:15 p.m.	3,670.95	23	1:30 p.m.	3,665.44
17	9:25 a.m.	3,668.16	24	2:30 p.m.	3,665.31
17	4:50 p.m.	3,667.73	25	12:00 noon	3,665.17
18	5:00 p.m.	3,666.72	Jan. 14, 1936	....	3,667.69
19	1:55 p.m.	3,666.19			

126. McElroy Packing Co., 3.3 miles north of Wilson Road near Southern Pacific Railway. Diameter 10 inches, depth 400 feet. Measuring point, top of pipe clamp, 0.4 foot above land surface and 3,902.63 feet above mean sea level. Water level Aug. 1, 1935, 210.75 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	3,691.88	Mar. 16, 1936	3,691.54	June 12, 1936	3,691.54
Dec. 14	3,693.28	Apr. 9	3,691.47	July 18	3,691.47
Feb. 14, 1936	3,691.82	May 18	3,691.62	Nov. 10	3,691.28
				Dec. 20	3,691.39

127. Western Gas Co., 2.6 miles north of Wilson Road near Southern Pacific Railway. Depth 362 feet. Measuring point, top of casing, 0.4 foot above land surface and 3,882.34 feet above mean sea level. Water level Aug. 7, 1935, 192.21 feet below measuring point.

Aug. 7, 1935	3,690.13	Dec. 14, 1935	3,690.34	Feb. 14, 1936	3,690.36
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129. Edgar Parks, 1.9 miles north from Wilson Road on U. S. Highway 70. Diameter 6 inches, depth 311 feet. Measuring point, top of casing, 0.5 foot above land surface and 3,942.70 feet above mean sea level. Water level Aug. 6, 1935, 254.90 feet below measuring point.

Aug. 6, 1935	3,687.80	Mar. 16, 1936	3,687.36	Sept. 14, 1936	3,685.76
Dec. 13	3,688.08	Apr. 9	3,687.25	Oct. 20	3,686.64
Feb. 14, 1936	3,687.90	May 18	3,686.88	Nov. 10	3,686.21

132. H. T. Ankerson, 2.9 miles north from Wilson Road on U. S. Highway 70. Diameter 6 inches, depth 257 feet. Measuring point, top of pipe clamp, 1.5 feet above land surface and 3,904.16 feet above mean sea level. Water level Aug. 7, 1935, 213.62 feet below measuring point.

Aug. 7, 1935	3,690.54	Apr. 8, 1936	3,690.16	Sept. 14, 1936	3,681.02
Dec. 13	3,690.85	May 18	3,690.25	Nov. 10	3,689.83
Jan. 14, 1936	3,690.53	June 12	3,690.07	Dec. 20	3,689.99
Mar. 16	3,690.18	Aug. 18	3,684.54		

134. W. S. Friar, 3.4 miles north from Wilson Road on U. S. Highway 70. Depth 219 feet. Measuring point, bottom of outlet, 2 feet above land surface and 3,889.38 feet above mean sea level. Water level Aug. 7, 1935, 197.50 feet below measuring point.

Aug. 7, 1935	3,691.88	Dec. 14, 1935	3,691.93	Feb. 14, 1936	3,691.38
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Water levels in wells in El Paso County, Texas--Continued

135. McElroy Packing Co., 4.2 miles north from Wilson Road. Diameter 10 inches, depth 350 feet. Measuring point, top of casing, 0.4 foot above land surface and 3,938.24 feet above mean sea level. Water level Aug. 7, 1935, 243.42 feet below measuring point.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 7, 1935	3,694.82	Apr. 9, 1936	3,694.61	Sept. 14, 1936	3,694.60
Dec. 12	3,694.84	May 18	3,694.61	Oct. 20	3,694.66
Jan. 14, 1936	3,694.81	June 12	3,694.53	Nov. 10	3,694.38
Feb. 14	3,694.93	July 14	3,694.49	Dec. 20	3,694.48
Mar. 16	3,694.66	Aug. 18	3,694.49		

136. City of El Paso and United States Geological Survey test well 3, 6.9 miles north from Wilson Road. Diameter 6 inches, depth 500 feet. Measuring point top of pipe, flush with land surface and 3,944.11 feet above mean sea level. Water level July 24, 1936, 244.45 feet below measuring point.

July 24, 1936	3,699.66	Sept. 14, 1936	3,699.94	Nov. 10, 1936	3,699.86
Aug. 18	3,699.86	Oct. 20	3,699.92	Dec. 20	3,699.90

ELM CREEK AND DEER CREEK AREAS OF SOIL CONSERVATION SERVICE

By V. C. Fishel and V. L. Austin

The observation well program in the Elm Creek and Deer Creek areas,^{1/} near Temple, Texas, was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service. Water-level measurements were made about weekly in 21 wells during the year by members of the Soil Conservation Service. Automatic water-stage recorders were operated throughout the year on 6 wells (4, 6, 13, 14, 23, and 28). Approximately 700 measurements were made during the year ending December 31, 1936.

The average water-levels given in the present report do not correspond to those given in Water-Supply Paper 777 because wells 1 and 19 have been excluded from the list of wells used in computing the new averages, and wells 4, 6, and 9 have been added to the list. Thus 21 wells (4, 6, 7, 8, 9, 11, 12, 13, 14, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32) have been used for computing the average water levels for the entire period of record.

There appears to be a close correlation in this area between the fluctuation of the water levels in the wells and the precipitation. The area was severely affected by the drought in 1934 with the result that the water levels declined an average of about 6.0 feet from the time of

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water Supply Paper 777, pp. 224-227, 1936.

the initial measurements in April until about October 29. About 7 inches of precipitation during November raised the water levels an average of about 1.5 feet by December 1 and they were maintained at nearly the same stage throughout December and January. There was about 3 inches of precipitation in February 1935, and during the month the water levels rose an average of about 2.0 feet. A dry March permitted a slight decline, but about 2 inches of rain in April, 8 inches in May and 8 inches in June resulted in an average rise of 3.0 feet by June 28. The precipitation averaged less than 2 inches in July and August, and the water levels declined nearly 3.0 feet during these months. However, about 7 inches of precipitation in September caused a rise of about 2.0 feet, and about 6 inches in December caused another large rise. Thus on December 18, 1935, the average of the water levels was at the highest stage during the year, which was 5.44 feet higher than the low stage of the year on January 17 and 5.37 feet higher than on January 1, 1935. The few measurements that were made between December 18 and January 3 indicate no great change in the water levels between these dates.

Low precipitation during January, February, and March, 1936 permitted the water levels to decline an average of 2.5 feet by March 31. Moderately heavy precipitation during April and May caused a rise of about 3.4 feet by June 4. The water levels declined an average of nearly 4.0 feet from June 4 until about September 22. At this time the water levels reached their lowest average stage of the year, which, however, was 2.56 feet higher than the lowest average stage in 1935. Heavy precipitation in October and December caused an average rise of more than 5.0 feet by December 31, when the water levels reached the highest average stage during the period of record beginning in April 1934.

The average water level on December 31 stood about 2.1 feet higher than on January 1, 1936, 7.55 feet higher than on January 1, 1935, and about 2.5 feet higher than in April 1934, when the first measurements were made.

Wells in the Elm Creek and Deer Creek areas, near Temple, Tex.

(The depth to the water level is the depth below the measuring point on January 1, 1935. The height of the measuring point is its height with reference to the arbitrary datum. The altitude of the measuring point is its altitude with reference to sea level.)

Well no.	Owner and location	Depth (feet)	Diameter a (feet)	Depth to water level (feet)	Height of measuring point (feet)	Altitude of measuring point (feet)
4	Tom Cypert, 1 mile N. and 4 miles E. from Troy.	23.3	3.5	15.84	25.84	569.47
6	Richard Feind, 2 miles S. and 6 miles W. from Chilton.	14.8	3.5	13.80	23.80	493.60
7	C. L. Bridger, $3\frac{1}{2}$ miles S. and $2\frac{3}{8}$ miles W. of Chilton.	3.3	3	19.52	29.52	583.33
8	Hamlett, $1\frac{1}{2}$ miles W. of Chilton.	17.1	2.25x3	16.52	26.52	424.38
9	J. L. Fiser, 6 miles E. of Eddy.	11.0	0.5	8.00	18.00	501.51
11	Cemetery well, 1 mile N. of Temple.	21.0	2.5	13.75	23.75	681.61
12	E. O. Lamar, $1\frac{1}{2}$ miles N. and $1\frac{1}{2}$ miles E. from Temple.	23.0	2.5	6.50	16.50	640.91
13	1 mile S. and $\frac{1}{2}$ mile W. from Troy	21.0	2x2.5	15.74	25.74	742.98
14	$2\frac{1}{2}$ miles S. and $3/4$ mile E. from Moody.	25.8	3.5	14.72	24.72	738.58
20	J. K. Hughes, 1 mile N. and $\frac{1}{2}$ mile E. of Oenaville.	20.8	2	13.84	b 23.84	.....
22	Bravne, $2\frac{3}{8}$ miles W. of Ocker.	24.5	2.5	13.62	23.62	519.51
23	2 miles S. and $\frac{1}{2}$ mile W. of Ocker.	25.8	3.5	6.20	16.20	483.95
24	L. U. Wentreck, 4 miles S. of Ocker.	23.0	2.5	18.00	28.00	470.35
25	Stranad, 7 miles W. of Heidenheimer.	27.8	3	18.49	28.49	459.40
26	Charles Simek, 6 miles W. and $1\frac{1}{2}$ miles N. from Heidenheimer.	20.2	2.5	18.65	28.65	487.71
27	J. B. Little, 4 miles W. of Heidendeimer.	14.3	3.5	12.20	22.20	488.98
28	1 mile S. and 5 miles E. from Temple.	19.3	3.5	15.62	25.62	495.37
29	Vince Dusek, 3 miles E. and 1 mile S. from Temple.	20.9	2.5	14.51	24.51	.....
30	Herna, 3 miles E. and $\frac{1}{2}$ mile N. from Temple.	11.5	3	9.93	c 19.93	535.14
31	Sam Garth, 3 miles N. and $\frac{3}{8}$ mile E. from Temple.	16.9	2	6.30	16.30	663.90
32	Flint and Hammersmith (Sanders) 2 miles S. and $\frac{1}{2}$ mile E. from Troy.	11.3	.5	10.88	20.88	678.64

a The diameter of these wells was erroneously given in Water-Supply Paper 777 as inches instead of feet.

b 25.84 feet since Apr. 13, 1936.

c 19.18 feet up to Nov. 13, 1934.

Water levels in wells in the Elm Creek and Deer Creek areas,
near Temple, Tex., in feet above the arbitrary datum.

Date	4	6	7	8	9	11	12	13
1934								
Apr. 25-30	20.88	17.42	11.85	11.52	.....	18.09	13.33	19.02
May 8-9	20.25	16.50	12.65	11.52	.....	17.75	12.92	18.24
14-15	.....	.....	12.65	11.52	.....	17.45	12.92	17.00
19-21	.....	.....	12.65	11.68	.....	17.25	15.58	15.99
26-28	.....	.....	12.65	11.68	.....	17.09	12.33	15.22
June 1-2	19.10	14.66	12.65	11.52	.....	16.59	12.00	14.51
4-6	.....	14.47	12.65	11.52	.....	16.42	11.92	.....
9-13	18.54	14.07	12.65	11.52	.....	15.75	11.33	13.00
16-18	18.36	13.95	12.72	11.52	.....	15.25	10.95	11.93
23-25	17.81	13.60	12.72	11.52	10.90	15.65	10.60	10.87
July 2	.....	.....	12.62	11.52	10.50	14.55	10.40	.....
7-9	.....	.....	12.62	11.52	10.00	13.25	9.60	10.06
13-16	16.41	12.82	12.62	10.82	9.60	12.65	9.20	9.73
21-23	.....	13.45	12.52	9.92	9.20	12.05	8.80	9.38
28-30	15.49	12.32	12.52	9.92	8.90	11.45	8.50	9.16
Aug. 4-6	14.96	12.04	12.32	9.92	8.40	10.75	8.05	8.97
10-13	14.57	11.77	12.22	9.92	8.10	10.05	7.60	8.76
17-20	14.09	11.51	12.02	9.72	7.55	9.35	7.20	8.61
27-31	13.30	11.08	11.82	10.22	.....	8.65	6.90	8.37
Sept. 4-7	.....	.....	11.72	10.32	.....	8.00	6.55	8.33
10-14	12.79	10.87	11.42	10.28	.....	7.55	6.50	8.29
17-21	12.33	10.61	11.26	10.28	.....	7.14	6.06	8.27
25-28	.....	.....	11.08	10.24	.....	6.62	5.78	8.26
Oct. 2-5	11.85	10.36	10.87	10.22	.....	6.25	6.03	8.24
8-12	.....	.....	10.75	10.17	.....	5.99	5.29	8.19
15-19	.....	.....	6.86	9.72	.....	5.71	5.15	8.15
26-27	10.92	10.06	4.77	9.72	.....	5.31	4.88	8.10
29	.....	.....	5.42	9.94	.....	5.30	4.78	.....
Nov. 3-5	.....	.....	6.71	10.09	.....	5.10	4.91	8.06
9-13	.....	10.09	9.11	10.13	.....	4.91	4.85	8.07
23-24	10.64	10.60	9.94	10.18	.....	8.67	8.64	18.94
Dec. 1	.....	.....	10.05	10.18	.....	8.78	9.52	.....
4-8	10.38	10.41	10.04	10.16	.....	8.84	9.57	13.56
10-14	10.32	10.28	10.02	10.21	.....	9.08	9.56	11.67
21-22	9.56	10.19	10.00	10.05	.....	9.49	10.05	10.51
1935								
Jan. 2-3	10.00	9.88	10.00	9.97	.....	10.78	9.98	9.68
9-11	.....	9.79	10.08	9.97	.....	9.94	10.03	9.43
17-18	9.79	.....	10.06	9.89	.....	10.11	10.07	9.05
24-25	9.35	9.51	9.94	9.89	.....	10.37	10.12	10.51
29	.....	.....	9.93	9.86	.....	10.57	10.23	.....
Feb. 6-8	9.44	9.24	9.86	9.94	.....	13.81	10.27	9.16
20-22	14.54	11.58	9.97	9.91	.....	15.77	13.14	20.52
Mar. 1	14.61	11.53	10.00	9.81	.....	16.72	13.20	19.64
8-9	.....	11.48	10.04	9.77	.....	17.22	13.51	18.31
15	14.70	11.44	10.17	9.74	.....	17.54	13.59	15.61
22	14.92	11.39	10.24	9.74	.....	17.29	13.50	14.84
29	14.89	10.25	10.29	9.59	.....	17.23	13.08	14.39
Apr. 5	.....	10.26	10.33	9.69	11.57	.....	13.13	11.96
11-13	14.82	11.05	10.37	9.66	11.13	.....	12.81	10.64
17-20	.....	.....	10.40	9.65	11.17	.....	12.20	10.05
May 10-11	18.51	12.50	10.52	9.79	12.95	.....	13.91	17.16
24-25	20.57	13.36	11.71	10.27	12.49	.....	13.63	20.90
June 7-10	21.03	13.45	12.06	10.30	13.61	.....	13.41	20.39
28	20.72	14.94	12.51	10.80	13.44	.....	13.23	21.06
July 5-6	.....	.....	12.72	10.71	13.94	18.61	12.71	20.42
12-15	.....	.....	12.84	10.62	12.89	17.93	12.00	19.36
19-20	.....	13.56	12.93	10.50	.....	17.65	11.87	18.43
26-27	19.41	13.41	13.10	10.38	11.85	17.49	11.82	18.20
Aug. 2	18.66	13.08	12.78	10.24	11.42	17.03	10.44	15.89
8-9	.....	.....	12.60	10.03	10.55	16.50	10.82	14.52
15-16	.....	.....	12.45	10.04	10.62	15.92	10.78	12.26
29-30	16.44	.....	12.02	9.55	9.81	14.62	9.82	10.21
Sept. 16-17	19.80	12.62	11.90	9.84	11.03	17.00	12.75	21.71
Oct. 3-4	18.96	12.50	11.48	9.73	10.83	17.27	12.80	20.31
10-11	.....	.....	11.05	9.58	10.53	16.93	12.65	19.74
16-18	.....	.....	11.29	9.52	10.47	16.85	12.50	18.92
30	.....	12.98	11.50	9.82	11.28	17.88	13.94	20.08

Water levels in wells in the Elm Creek and Deer Creek areas--Continued

Date	4	6	7	8	9	11	12	13
1935								
Nov. 8-12	.....	.....	11.17	9.90	11.90	17.97	14.04	20.53
15-18	20.19	13.42	11.15	9.96	11.91	18.01	14.05	19.85
Dec. 18-20	21.43	14.83	11.60	10.24	14.81	19.03	14.13	20.91
1936								
Jan. 3-6	21.75	15.02	12.27	10.82	14.84	18.96	14.02	20.88
15-17	20.76	15.20	12.29	10.65	14.71	18.83	13.94	20.00
22-24	20.30	15.13	12.30	10.58	14.35	18.58	13.83	19.14
Feb. 11-14	20.22	15.12	12.46	10.43	13.96	18.24	13.77	15.18
Mar. 11-13	.....	.....	12.62	10.29	13.59	17.58	13.45	10.39
19-20	19.34	14.91	12.69	10.27	13.63	17.59	13.21	10.14
24-27	19.24	14.88	12.73	10.27	13.33	17.29	12.99	9.91
31	.....	.....	12.70	10.27	13.23	17.22	12.76	.....
Apr. 7-10	.....	.....	12.63	10.15	12.77	16.92	12.58	9.53
13-17	18.81	14.46	12.76	10.21	.....	16.91	12.49	9.39
May 1-2	20.42	14.55	12.94	10.35	13.18	16.90	13.60	12.38
7-8	19.56	14.46	12.92	10.25	13.16	16.86	13.17	11.40
13-15	20.59	15.35	12.84	10.52	14.38	17.35	14.09	15.98
19	.....	.....	12.81	10.54	13.87	17.82	13.80	15.85
June 5	20.83	17.45	13.19	11.97	15.13	19.15	13.80	20.55
11-12	20.32	16.62	13.32	11.94	14.25	18.65	13.29	19.62
17-19	19.84	15.82	13.44	12.00	13.81	18.35	12.60	19.00
July 16-17	.....	15.45	13.57	12.58	13.84	18.06	13.63	19.15
22-23	19.44	.....	13.60	12.74	13.40	17.70	12.95	18.28
29-31	.....	.....	13.65	12.72	12.70	17.23	12.46	15.69
Aug. 4-6	18.52	14.38	13.52	12.62	12.00	17.65	11.76	14.06
12-13	17.93	13.90	13.50	12.52	11.49	17.10	11.20	11.24
18-20	17.54	13.56	13.34	12.47	11.17	15.70	10.90	10.14
25-27	17.13	13.34	13.35	.....	10.82	15.05	10.75	9.62
Sept. 11-12	16.37	12.95	13.22	12.22	9.87	13.70	10.12	9.06
22-24	15.99	13.02	13.16	12.14	9.72	13.55	10.10	10.56
Oct. 6-8	.....	.....	13.12	12.12	10.48	15.73	11.40	20.29
13-15	17.44	13.35	13.02	12.07	10.33	16.88	12.26	18.80
Nov. 12-13	.....	15.10	12.86	11.74	13.93	18.60	14.00	20.86
19-20	.....	15.02	12.87	11.72	13.48	18.45	13.98	20.39
Dec. 15-17	21.69	18.67	13.14	11.97	16.18	19.35	14.14	21.59
23-24	20.81	18.01	13.47	12.22	15.59	18.93	14.01	21.16
30-31	21.84	19.30	13.68	12.57	16.52	19.58	14.30	.....

Date	14	20	22	23	24	25	26
1934							
Apr. 25-30	17.40	14.84	16.62	14.20	20.00	14.29	13.65
May 8-9	.....	14.84	16.03	.....	19.00	13.94	13.65
12-15	15.55	14.84	15.96	14.27	18.50	13.94	13.65
19-21	14.74	14.62	15.62	14.22	18.17	13.94	13.65
26-28	14.07	14.51	15.29	14.18	17.83	13.94	13.65
June 1-2	13.52	14.34	15.12	13.84	17.50	13.94	13.65
4	.....	14.34	15.12	.....	17.53	13.94	13.65
9-11	13.31	14.04	15.00	13.44	16.83	13.94	13.65
16-18	12.62	13.84	14.62	13.05	16.40	13.69	13.65
23-25	12.22	13.64	14.32	12.37	16.00	13.59	13.65
July 2	.....	13.34	14.12	.....	16.00	13.49	13.45
7-9	11.56	13.04	13.87	11.34	15.00	13.19	13.25
13-16	11.32	13.04	13.62	10.98	14.50	13.14	13.25
21-23	11.07	12.74	13.32	10.55	14.20	12.99	13.05
28-30	10.87	12.54	13.32	.....	13.90	12.84	12.85
Aug. 4-6	10.71	12.24	12.82	10.01	13.50	12.59	12.65
11-13	10.54	12.04	11.37	9.80	13.30	12.49	12.55
17-20	10.42	11.74	12.72	9.57	12.90	12.29	12.30
27-31	10.15	11.54	12.12	9.15	12.60	11.99	12.15
Sept. 4	.....	11.34	12.22	.....	12.30	11.79	11.95
10-12	.....	11.20	11.86	.....	12.05	12.58	11.72
15-17	9.90	11.02	11.76	9.12	11.90	11.45	11.60
21-25	9.81	10.85	11.40	8.94	11.54	11.29	11.44
Oct. 2	.....	10.68	11.02	.....	11.23	11.07	11.27
5-8	9.60	10.53	10.79	8.61	9.43	10.94	11.27
13-15	9.48	10.39	10.52	8.50	10.06	10.84	11.05
26-27	9.29	10.24	10.21	8.39	10.42	10.56	10.80
29	.....	10.16	10.12	.....	9.91	10.55	10.77

Water levels in wells in the Elm Creek and Deer Creek areas--Continued

Date	14	20	22	23	24	25	26
1934							
Nov. 5-9	9.10	10.09	10.21	8.48	10.32	10.37	10.63
13-16	9.05	10.05	10.13	8.58	10.43	10.35	10.54
23-24	14.67	10.04	10.04	9.15	11.37	10.24	10.41
Dec. 1	.....	10.04	10.34	.....	10.28	10.16	10.32
4	.....	10.05	10.30	.....	10.19	10.06	10.24
10-14	10.57	10.03	10.16	8.95	10.15	10.05	10.20
21-22	10.31	10.01	10.06	9.27	10.02	10.00	.....
1935							
Jan. 3-4	9.94	10.00	9.97	9.97	10.00	10.00	10.00
9-11	9.84	9.97	9.94	9.88	9.91	9.94	9.94
17-18	9.64	10.00	9.76	9.78	9.88	9.89	9.89
24-25	9.57	10.52	9.66	10.49	9.80	9.80	9.83
29	.....	10.44	9.68	.....	9.79	9.79	9.81
Feb. 6-8	9.48	10.24	8.62	10.13	9.83	9.84	9.78
20-22	10.69	11.78	11.38	13.60	11.26	9.85	9.82
Mar. 1	10.89	11.35	11.07	12.94	11.59	10.00	9.88
8-9	11.11	11.23	11.14	12.60	11.72	10.06	9.89
15	11.24	11.19	11.16	12.33	11.73	10.05	9.87
22	11.30	11.35	10.89	12.11	11.66	9.97	9.85
29	.....	11.17	10.84	11.85	11.62	9.97	9.85
Apr. 5	11.30	11.15	10.96	11.76	11.71	9.96	9.88
11-13	11.19	11.17	10.78	11.40	11.51	9.82	9.84
17	.....	11.14	10.86	.....	11.71	9.95	9.92
May 10-11	12.55	11.94	12.40	13.77	11.98	9.82	9.90
20-25	19.05	11.99	14.38	14.14	15.93	10.30	10.66
June 7-10	19.19	12.76	14.16	14.04	15.57	10.80	11.03
24-28	21.59	13.61	16.96	14.31	16.97	11.65	11.81
July 5-6	20.57	13.67	16.29	14.26	16.56	11.92	12.01
12-15	19.21	13.58	15.64	13.91	16.09	12.01	12.10
19-20	18.40	13.53	15.36	13.52	15.86	12.08	12.13
26-29	17.73	13.45	14.86	13.10	15.41	13.07	12.11
Aug. 2	17.13	13.38	14.76	12.72	15.26	12.04	12.13
8-9	17.39	13.20	14.47	12.15	14.96	12.01	12.10
15-16	15.71	13.06	14.24	11.72	14.61	11.95	12.07
29-30	14.43	12.66	13.64	10.89	13.95	11.69	11.90
Sept. 16-17	17.44	13.20	14.62	13.81	15.66	11.59	11.99
Oct. 3-4	17.39	13.63	13.14	13.59	15.23	11.51	11.01
10-11	16.59	13.63	13.81	13.22	14.78	11.37	10.89
16-18	14.72	13.60	13.67	12.87	14.60	11.34	10.87
25-30	14.87	13.77	13.82	12.94	14.15	11.28	11.77
Nov. 12-15	16.61	13.89	13.48	12.12	13.66	11.14	11.65
18-22	16.27	13.96	13.49	11.95	13.63	11.19	11.64
Dec. 16-18	21.29	14.84	16.50	14.22	16.65	11.28	12.02
1936							
Jan. 3-6	19.52	15.42	16.07	14.28	15.87	11.14	12.13
15-17	17.94	15.47	15.85	14.30	15.84	11.15	12.19
22-24	17.05	15.59	15.59	14.29	15.63	11.05	12.15
Feb. 11-14	14.52	15.49	15.11	14.25	15.19	11.01	12.04
Mar. 11-14	12.74	15.73	14.67	14.33	14.35	10.72	11.85
19-20	12.44	15.76	14.82	13.87	14.37	10.76	11.91
24-27	12.20	15.78	14.68	13.80	14.24	10.70	11.83
31	.....	15.76	14.72	.....	14.24	10.73	11.83
Apr. 6-10	11.72	15.64	14.56	13.40	14.05	10.63	11.75
13-17	11.53	15.62	14.54	13.60	14.15	10.71	11.79
May 1-2	11.56	16.24	15.92	13.94	13.86	10.64	11.80
7-8	11.32	16.40	14.94	13.69	13.98	10.73	11.85
13-15	12.26	16.69	15.64	14.10	13.78	10.77	12.01
19-22	13.57	16.80	16.37	13.89	13.80	10.99	12.25
June 4-5	13.62	17.42	18.97	.....	19.88	12.86	13.65
11-12	20.32	17.26	18.42	14.39	18.85	12.73	14.07
17-19	18.95	17.09	17.92	14.38	18.30	13.19	14.23
July 16-17	16.09	17.14	17.77	14.37	18.25	13.87	14.57
22-23	15.40	16.94	17.40	14.30	17.98	13.90	14.60
29-31	14.62	16.66	16.80	.....	17.48	13.87	14.56
Aug. 4-6	14.20	16.31	16.20	14.20	17.00	13.82	14.52
12-13	13.57	16.08	15.84	13.98	16.70	13.69	14.45
18-20	13.10	15.79	15.50	13.72	16.45	13.65	14.37
25-27	12.72	15.55	15.06	13.45	16.14	13.55	14.28
Sept. 11-12	11.97	14.99	14.62	13.13	15.32	13.24	13.97
22-24	11.72	14.99	14.42	13.52	14.92	13.09	13.89

Water levels in wells in the Elm Creek and Deer Creek areas--Continued

Date	14	20	22	23	24	25	26
1936							
Oct. 6-8	17.78	15.37	14.37	14.27	14.52	13.04	13.75
13-15	17.42	15.66	14.42	14.12	14.38	12.94	13.81
Nov. 12-13	20.64	16.94	16.67	14.22	.....	13.05	14.39
19-20	19.28	16.89	16.12	14.24	18.02	12.88	14.42
Dec. 15-17	22.10	16.85	19.30	14.25	22.10	14.40	16.09
23-24	20.61	17.79	18.47	14.25	20.49	14.64	16.25
30-31	21.43	18.26	19.77	.....	23.00	15.35	16.75

Date	27	28	29	30	31	32	Average
1934							
Apr. 25-30	12.70	16.13	13.51	13.68	.....	.....	.....
May 8-9	12.20	16.09	12.01	13.18	.....	.....	.....
14-15	12.20	15.88	11.71	13.18	.....	.....	.....
19-21	12.03	15.65	11.18	13.18	.....	.....	.....
26-28	11.78	15.83	11.18	13.18	.....	.....	.....
June 1-2	11.70	15.00	11.18	13.01	.....	.....	.....
4-6	11.70	.....	11.18	12.85	.....	.....	.....
9-13	11.54	14.92	10.01	12.81	.....	13.38	13.67
16-18	11.45	14.75	8.26	12.68	.....	12.68	13.28
23-25	11.30	14.43	8.16	11.98	.....	10.93	12.81
July 2	11.10	14.17	8.01	11.88	9.80	10.58	.....
7-9	10.90	13.91	7.81	10.76	9.70	9.78	11.64
13-16	10.80	13.69	7.81	10.51	9.60	9.28	11.69
21-23	10.70	13.33	7.76	9.78	9.55	8.93	11.17
28-30	10.50	13.06	7.76	9.38	9.50	8.68	11.17
Aug. 4-6	10.40	12.79	7.71	8.88	9.40	8.33	11.17
10-13	10.40	12.50	7.41	8.48	10.21	8.08	10.58
17-20	10.25	12.24	7.41	8.18	9.29	.....	10.46
27-31	10.10	11.64	7.41	7.68	9.10	.....	10.31
Sept. 4-7	9.90	11.36	7.41	.....	8.90	.....	.....
10-14	9.48	11.08	7.56	.....	8.80	.....	.....
17-25	9.27	10.86	7.51	.....	9.17	.....	.....
25-28	9.04	10.62	7.31	.....	8.73	.....	.....
Oct. 2-5	9.02	10.41	7.25	.....	8.55	.....	.....
8-12	8.82	10.23	7.17	.....	8.45	.....	.....
15-19	8.76	10.09	7.15	.....	7.34	.....	.....
26-27	8.73	9.92	7.02	.....	8.02	.....	.....
29	8.71	.....	7.01	.....	8.01	.....	.....
Nov. 3-5	9.75	9.77	7.27	.....	8.75	.....	.....
9-13	10.14	9.69	7.57	.....	8.55	.....	.....
23-24	12.18	10.05	8.46	5.78	10.31	8.62	10.44
Dec. 1	11.02	10.03	8.79	5.90	10.22	9.19	.....
4-8	10.75	10.03	8.88	8.54	10.27	9.37	10.08
10-14	10.43	10.04	9.14	9.26	10.07	9.59	9.99
21-22	10.23	10.02	9.53	9.73	9.96	9.83	9.94
1935							
Jan. 2-3	9.93	9.99	9.91	10.09	10.02	10.06	10.00
9-11	9.91	10.05	9.98	10.52	10.01	10.03	9.96
17-18	9.88	10.06	10.09	10.85	9.98	10.06	9.93
24-25	9.80	9.99	10.18	10.63	10.12	10.14	10.01
29	9.82	10.02	10.27	11.20	10.07	10.20	.....
Feb. 6-8	9.86	10.05	10.38	11.35	10.22	10.27	10.08
20-22	10.29	11.09	11.27	13.25	10.76	12.89	12.17
Mar. 1	10.22	11.25	11.59	13.36	10.69	13.88	12.21
8-9	10.30	11.35	11.77	14.03	10.70	14.42	12.14
15	10.30	11.43	11.89	13.93	10.65	14.57	12.13
22	10.27	11.49	11.82	13.97	10.60	14.52	12.07
29	10.20	11.46	11.83	13.80	10.56	14.34	.....
Apr. 5	10.17	11.60	12.93	14.26	10.48	14.21	.....
11-13	10.11	11.55	12.13	14.04	10.39	13.86	.....
17-20	10.04	11.63	12.24	13.96	10.37	13.75	.....
May 10-11	10.84	11.93	11.65	14.53	10.95	16.02	12.68
24-25	12.40	13.62	13.00	16.05	11.58	16.56	14.12
June 7-10	12.39	14.16	11.35	15.64	11.78	16.76	14.19
28	13.90	16.43	13.03	16.09	11.87	16.46	15.07
July 5-6	13.34	16.20	11.92	15.37	11.64	15.89	.....
12-15	13.09	15.87	10.41	14.72	11.32	15.15	.....
19-20	12.95	15.57	10.29	14.42	11.18	14.92	.....

Water levels in wells in the Elm Creek and Deer Creek areas--Continued

Date	27	28	29	30	31	32	Average
1935							
July 26-27	12.69	15.26	10.23	14.09	11.07	14.65	13.97
Aug. 2	12.57	14.98	9.55	13.99	10.87	13.94	13.47
8-9	12.20	14.71	8.93	13.47	10.59	13.27	.....
15-16	11.91	14.41	8.79	12.99	10.38	12.71	.....
29-30	11.31	13.80	8.12	11.73	10.25	11.49	11.91
Sept. 16-17	12.31	14.44	10.14	13.22	11.45	16.08	13.93
Oct. 3-4	12.20	13.98	10.17	13.37	11.32	15.99	13.64
10-11	12.05	13.77	10.23	13.19	11.28	15.74	13.21
16-18	11.98	13.58	10.07	12.98	11.15	15.60	12.98
30	12.24	13.47	10.73	13.53	.....	17.04	13.53
Nov. 8-12	12.25	13.46	11.39	13.43	11.40	12.75	13.30
15-18	12.12	13.34	11.66	13.40	11.55	16.60	13.78
Dec. 18-20	.....	15.54	14.41	15.35	11.40	16.96	15.37
1936							
Jan. 3-6	.....	15.74	15.13	15.81	11.66	16.61	15.40
15-17	13.74	16.07	15.37	15.67	11.58	16.52	15.14
22-24	13.68	15.98	15.19	15.43	11.45	16.28	14.93
Feb. 11-14	13.53	15.55	15.19	15.18	11.12	15.47	14.43
Mar. 11-13	13.63	15.32	15.06	14.11	10.98	14.48	13.47
19-20	13.67	15.22	14.97	13.91	.....	14.41	13.89
24-27	13.68	15.16	14.76	13.65	10.60	14.18	13.61
31	13.67	.....	14.62	13.39	10.55	14.04	12.97
Apr. 6-10	13.58	15.01	14.19	13.12	10.47	13.76	.....
13-17	13.45	14.89	13.77	13.03	10.40	13.70	13.31
May 1-2	13.91	15.49	13.96	13.11	.....	13.96	13.92
7-8	14.03	15.84	13.35	14.81	10.33	13.79	13.66
13-15	14.33	17.14	.....	16.16	11.67	15.09	14.53
19	14.27	.....	.....	15.37	.....	15.00	.....
June 4-5	.....	19.64	14.41	15.73	.....	16.28	16.36
11-12	.....	18.55	13.03	15.23	11.11	15.78	15.89
17-19	14.80	18.77	11.51	14.95	10.97	15.40	15.49
July 16-17	14.56	18.38	12.51	15.23	10.54	14.91	15.22
22-23	14.45	17.58	11.91	14.93	10.46	14.47	15.12
29-31	14.35	17.02	10.91	14.53	10.32	13.76	14.41
Aug. 4-6	13.95	16.57	10.01	14.05	.....	13.00	14.41
12-13	13.79	16.14	9.46	13.61	10.20	12.47	13.76
18-20	13.40	15.74	9.08	12.96	10.16	12.07	13.37
25-27	13.02	15.37	9.01	12.62	10.05	11.62	13.12
Sept. 11-12	12.30	14.77	8.86	11.55	9.47	10.73	12.49
22-24	12.15	14.49	8.83	11.38	10.10	10.52	12.49
Oct. 6-8	12.22	15.19	10.99	12.96	10.45	13.98	.....
13-15	12.82	15.22	11.43	13.65	10.62	14.76	14.07
Nov. 12-13	13.84	17.34	13.63	15.33	11.02	16.21	15.28
19-20	.....	17.03	.....	15.20	10.97	16.09	.....
Dec. 15-17	15.10	20.95	16.61	16.35	11.85	16.85	17.12
23-24	14.82	19.57	16.23	15.85	11.75	16.48	16.73
30-31	15.50	21.50	17.99	16.94	11.95	17.34	17.55

UTAH

By G. H. Taylor and H. E. Thomas

The ground-water investigation in the State of Utah during 1936 followed essentially the program that was begun in 1935.^{1/} Most of the records of fluctuations of ground-water levels were obtained by the United States Geological Survey in cooperation with the State engineer of Utah. The number of observation wells was increased from about 230 at the end of 1935 to about 360 at the end of 1936. This number includes several wells in each of the areas of important ground-water development in Utah and numerous wells in smaller or less important areas. Many of the ground-water areas are not covered as completely as is desired and wells also are needed in other smaller and more remote areas. About 6 water-level or pressure measurements were made during 1936 in wells in the areas of major ground-water development, and one or two measurements were made on observation wells in areas of lesser importance. Eighteen automatic recording gages were maintained on wells by the Geological Survey in Utah during 1936.

In addition to the data obtained through the cooperative investigation between the United States Geological Survey and the State engineer of Utah, a considerable amount of information concerning the wells in the State was obtained directly by the State engineer^{2/} as a result of the underground-water law which was enacted by the 1935 session of the Utah State legislature.^{3/} These data include information concerning the type, size, and use of wells and the water-bearing materials penetrated, which were furnished by well owners as required by law. Detailed locations of the wells and altitudes of benchmarks established at the wells were generally furnished by the State engineer. Claims had been filed by owners of 14,682 wells prior to June 30, 1936, and it was estimated that 10,000 existing wells were yet unclaimed. The State engineer has not completed the establishment of benchmarks and locations of wells but expects eventually to have this information for all wells in the State.

The Salt Lake City Corporation, under the direction of G. D. Keyser, commissioner of water supply and waterworks, continued to collect records of ground-water level in the Jordan River Valley.

1/ Taylor, G. H., and Thomas, H. E., Utah, in Water levels and artesian pressure in observation wells in the United States in 1935; U. S. Geol. Survey Water-Supply Paper-777, pp. 231-233, 1936.

2/ Humpherys, T. H., 20th biennial report of the State engineer to the governor of Utah, for the biennium July 1, 1934, to June 30, 1936, pp. 78-90.

3/ Idem, pp. 15-22.

The water-level measurements made in the city's observation wells that are included in the State program were kindly supplied to the Geological Survey by the Salt Lake City Corporation.

Earl Lemon, of Willard, continued to furnish measurements on well (B-7-2)2ab. W. S. Lemon, of Woods Cross, furnished measurements on well (B-2-1)35ad2 and maintained an automatic recording gage on well (B-2-1)36bb3.

A short report on the fluctuations of ground-water levels and interference of wells in the vicinity of Lehi, Utah County, is being prepared from field data gathered during 1935 and 1936. A report^{4/} was made on ground-water conditions in a typical area in the vicinity of Woods Cross, Davis County.

A summary of the net change in ground-water level in observation wells in Utah in 1936 is given in the following table. This summary does not include all wells that are being measured periodically, because a yearly comparison of the water levels in some of them could not be made and the location or some individual characteristic of other wells did not justify their inclusion. Net changes in water level in 1936 are based on measurements of the water level made during November and December 1935 and 1936 or interpolations of the position of the water level during those months.

Summary of net change in ground-water level
in observation wells in Utah in 1936

(Based on measurements during the fall and winter of 1935 and 1936)

Southwestern Bolson Province				
Ground-water area	Number of ob- serva- tion wells	Maximum net rise(+) or minimum net decline (-) (feet)	Minimum net rise(-) or maximum net decline (-) (feet)	Average net change in group of observation wells (feet)
Cedar City Valley, Iron County	9	-0.1	-3.1	-1.8
Parowan Valley, Iron County	5	+ .9	- .8	0
Beaver Valley, Beaver County	5	+3.6	+ .6	+2.0
Escalante Valley:				
Beaver County	12	+1.8	0	+ .7
Iron and Washington counties	12	+ .2	- .3	- .1
Pavant Valley, Millard County	6	+5.0	+ .7	+3.0
Sevier Desert, Millard County	12	+ .8	- .2	+ .1
Utah Lake Valley, Utah County	20	+8.2	+1.8	+5.0
Juab Valley, Juab County	5	+9.8	- .4	+4.4
Tooele Valley, Tooele County	11	+ .6	-2.1	- .6
Rush Valley, Tooele County	6	+1.9	- .3	+ .7
Jordan River Valley, Salt Lake County	31	+8.9	- .6	+2.0
East Shore area:				
Davis County	12	+9.1	+ .7	+4.6
Weber County	5	+2.6	0	+1.0
Malad and Lower Bear River Valley, Boxelder County	7	+7.8	+ .6	+4.0
Ogden Valley, Weber County	4	+6.4	+ .5	+4.6
Cache Valley, Cache County	7	+6.4	+ .8	+4.3

^{4/} Taylor, G. H., and Thomas, H. E., Ground water in the vicinity of Woods Cross, Davis County, Utah: Typewritten report on file in the U. S. Geol. Survey offices at Washington, D. C., and Salt Lake City, Utah, and in the office of the State engineer and at the University of Utah Engineering Library, Salt Lake City, January, 1937.

Summary of net change in ground-water level
in observation wells in Utah in 1936--Continued

(Based on measurements during the fall and winter of 1935 and 1936)

Montana-Arizona Plateau Province

Ground-water area	Number of ob- serva- tion wells	Maximum net rise(+) or minimum net decline (-) (feet)	Minimum net rise (-) or maximum net decline (-) (feet)	Average net change in group of observation wells (feet)
Central Sevier Valley, Sevier, Sanpete, and Juab counties	17	+2.0	0	+ .8
Upper Sevier Valley, Gar- field and Piute counties	6	+7.5	-2.9	+ .4
Sanpete Valley, Sanpete County	27	+10.8	- .9	+3.9
Grass Valley, Sevier County	2	+1.1	+1.0	+1.0
Uinta Basin, Duchesne and Uinta counties	10	+16.4	- .4	+3.0

The ground-water level rose in most areas during 1936. There were average net declines in only 3 of the 22 ground-water areas, and only in Cedar City Valley, in Iron County, did the water level in all observation wells decline. In most areas where the water level averaged a net change of 1 foot or less, the maximum and minimum changes in individual wells, shown in columns 3 and 4, were small, and the average net change in each of these areas is probably representative of conditions over the area. However, in areas where the water level averaged a net change of more than 1 foot the greatest change usually occurred in wells located at or nearest areas of ground-water recharge, and the smallest change usually occurred in the wells at greater distances from the recharge area. In these areas the average net change, shown in column 5, may not represent general conditions.

The following tabulation includes all measurements of water levels in wells made by the United States Geological Survey in the State of Utah from 1931 to 1936, inclusive, and all measurements of water levels prior to January 1, 1937, collected from other sources, except those published in Water-Supply Paper 796-D, Geology and ground-water resources of Ogden Valley, Utah, and Water-Supply Paper 777, Water levels and artesian pressure in observation wells in the United States in 1935; and a large number of measurements made in the Jordan River Valley from 1931 to 1935, inclusive, which are to be published in another report. The tabulation includes all water-level measurements which have been made in the Jordan River Valley on observation wells that have been

continued as a part of the State observation-well program and which do not appear in Water-Supply Paper 777.

The tabulation includes all measurements made or obtained by the United States Geological Survey during 1936, consisting of the records from automatic recording gages operated regularly on 14 wells, records from automatic recording gages operated for short periods on 9 wells, about 2,280 periodic measurements made on 360 observation wells, and about 1,430 measurements made on 498 wells not measured periodically. It also includes the following records obtained prior to 1936: Records from 13 wells equipped with automatic recording gages, about 1,800 individual periodic measurements of the water level in observation wells, and about 925 individual measurements of the water level in wells not measured periodically. A total of more than 6,400 individual measurements are tabulated, exclusive of the records from recording gages.

Measurements of depths to water and artesian pressure were made by the United States Geological Survey except as indicated. Most flowing wells were closed 10 minutes before measurement of the pressure head. Altitudes, where given, are in feet above mean sea level, United States Geological Survey datum. All altitudes given were obtained by instrumental leveling; those in the Jordan River Valley were determined by the United States Geological Survey and most of the remainder were determined by the State engineer. For wells on which automatic water-stage recorders or pressure gages have been maintained, only a sufficient number of measurements are included in the following tabulation to outline the general trend of the water level; the complete record is available at the office of the United States Geological Survey at Salt Lake City.

Throughout this report the well number indicates the location by land subdivision according to a well-numbering system used in the State of Utah.^{5/} The complete well number comprises a group in parentheses designating the township, consisting of a letter designating the quadrant in relation to the base point of the standard base and meridian system, the number of the township, and the number of the range; the number of the section, a letter designating the quarter section, another letter designating the quarter of the quarter section, and a number designating the particular well within the 40-acre tract.

5 ^{5/} Humpherys, T. H., 20th biennial report of the State engineer to the Governor of Utah, for the biennium July 1, 1934, to June 30, 1936, p. 87.

By this system the letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quadrants of the standard base and meridian system of the General Land Office, and the letters a, b, c, and d designate, respectively, the northeast, northwest, southwest, and southeast quarters of the section and quarter section. Thus, the number (B-2-1)25ba3 designates well 3 in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 25, T. 2 N., R. 1 W., and the number (D-5-1)19ac1 designates well 1 in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 5 S., R. 1 E. (the letter B showing that the township is north of the Salt Lake base line and the range west of the Salt Lake meridian, and the letter D showing that the township is south of the Salt Lake base line and the range east of the Salt Lake meridian). If the location is within the land subdivisions based on the Uinta Special base and meridian, in the northeastern part of the State, this is indicated by prefixing the letter U. Thus, well U(A-2-1)36cd2 is well 2 in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 36, T. 2 N., R. 1 E., Uinta Special base and meridian. This system can be extended to designate the location within a 10-acre tract by adding another letter to the number. This has been done for a few wells whose location is known with sufficient detail, such as well (A-11-1)8dac4, which designates well 4 in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 11 N.; R. 1 E., Salt Lake base and meridian.

The name of the town or community nearest to the location of each well is given immediately after the well owner's name.

In the columns headed "Water level" the minus sign indicates depth to water, and the plus sign indicates the artesian pressure head.

Water levels in wells in Utah

(A-2-1)7cd1. F. W. Cottrell, Centerville, Davis County. Diameter 3 inches, depth 374 feet. Measuring point, top of tee, 1.0 foot above land surface and 4,266.74 feet above sea level. Pressure head, Aug. 14, 1935, 20.2 feet.

(A-2-1)7cd2. F. W. Cottrell, Centerville, Davis County. Diameter 1 $\frac{1}{4}$ inches. Measuring point, top of globe valve, at land surface and 4,269.74 feet above sea level. Pressure head, Aug. 14, 1935, 3.25 feet (found flowing).

(A-2-1)18ba. F. W. Cottrell, Centerville, Davis County. Diameter 3 inches, depth 377 feet. Measuring point, top of ell north of well, 0.5 foot above land surface and 4,269.76 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 14, 1935	+17.1	Mar. 2, 1936	+28.2	Aug. 12, 1936	+32.95
Oct. 18	+24.3	May 8	+31.85	Oct. 7	+33.9
Dec. 11	+26.4	June 25	+29.9	Dec. 15	+35.6

(A-3-2)14dc. Earl Waller, Porterville, Morgan County. Diameter 36 inches, depth 56 feet. Measuring point, top of plank over well, at land surface. Depth to water, Oct. 16, 1936, 51.80 feet; Dec. 11, 1936, 53.72 feet.

(A-3-2)24ca. Hyrum Adams, Porterville, Morgan County. Diameter 48 inches, depth 19 feet. Measuring point, top of concrete curb, 0.8 foot above land surface. Depth to water, Oct. 16, 1936, 15.19 feet; Dec. 11, 1936, 17.05 feet.

(A-4-2)15cc. Eliza Pentz, Stoddard, Morgan County. Diameter 48 inches, depth 25 feet. Measuring point, top of wood curb, 1.0 foot above land surface. Depth to water, Oct. 16, 1936, 21.90 feet; Dec. 11, 1936, 22.18 feet.

(A-4-2)17da. Heber Anderson estate, Milton, Morgan County. Diameter 4 inches, depth 25 feet. Measuring point, top of casing, 6.3 feet below land surface. Depth to water, Oct. 16, 1936, 15.85 feet; Dec. 11, 1936, 15.50 feet.

(A-4-2)26cc. Jesse C. Little, Morgan, Morgan County. Diameter 60 inches, depth 26 feet. Measuring point, arrow on curbing, 6.5 feet below land surface. Depth to water, Oct. 16, 1936, 3.40 feet; Dec. 11, 1936, 5.94 feet.

(A-4-2)27dd. Jesse C. Little, Morgan, Morgan County. Diameter 6 inches, depth 30 feet. Measuring point, top of casing, 0.7 foot above land surface. Depth to water, Oct. 16, 1936, 7.95 feet; Dec. 11, 1936, 10.14 feet.

(A-4-2)28ba. Milton school, Milton, Morgan County. Diameter 24 inches, depth 28 feet. Measuring point, top of tile casing, 0.3 foot above land surface. Depth to water, Oct. 16, 1936, 24.95 feet; Dec. 11, 1936, 25.45 feet.

(A-4-2)35cd. Albert Wiggins, Morgan, Morgan County. Diameter 16 inches, depth 27 feet. Measuring point, hole in pump base, 1.4 feet above land surface. Depth to water, Oct. 16, 1936, 16.61 feet; Dec. 11, 1936, 20.86 feet.

(A-4-2)36cb. City and county of Morgan, Morgan County. Diameter 8 inches. Measuring point, top of coupling on casing, 0.6 foot above land surface. Depth to water, Oct. 16, 1936, 25.63 feet; Dec. 11, 1936, 30.10 feet.

(A-5-1)27db. Emma R. France, Mountain Green, Morgan County. Diameter 6 inches, depth 150 feet. Measuring point, top of casing, at land surface. Depth to water, Oct. 16, 1936, 1.11 feet; Dec. 11, 1936, 1.60 feet.

(A-6-1)1dc. Huntsville, Weber County. Diameter 12 inches, depth 19 feet. Measuring point, top of 8-by 8-inch block, 1.0 foot above land surface. Ogden Valley report, no. 70.^a/ Depth to water, Sept. 30, 1935, 14.60 feet; Oct. 8, 1936, 14.12 feet.

(A-6-1)2db. H. B. Stallings, Huntsville, Weber County. Depth 17.2 feet. Measuring point, top of platform, 0.5 foot above land surface. Ogden Valley report, no. 63. Depth to water, Sept. 30, 1935, 14.75 feet; Oct. 8, 1936, 14.73 feet.^a/

(A-6-1)11ca. Wm. McDonald, Huntsville, Weber County. Diameter 2 inches, depth 125 feet. Measuring point, top of casing, 4.0 foot below land surface. Ogden Valley report, no. 96.^a/ Depth to water, Sept. 30, 1935, 7.00 feet; Oct. 8, 1936, found destroyed.

^a/ For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

(A-6-1)11db1. City of Ogden, Huntsville, Weber County. Diameter $8\frac{1}{4}$ inches, depth 90 feet. Measuring point, top of instrument shelf, 21.5 feet above land surface, and 4,853.73 feet above sea level. Ogden Valley report no. 102.^{a/} Recording gage operated on this well since Sept. 14, 1932.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	-11.52	Dec. 6, 1935	-14.50	June 26, 1936	-11.68
5	- 9.68	15	- 9.26	July 21	-12.27
7	-11.52	20	-10.16	22	-12.92
18	-11.77	31	- 9.36	31	-13.11
19	- 9.93	Jan. 11, 1936	- 9.96	Aug. 3	-11.49
20	-11.56	13	-10.77	11	-13.23
24	-11.88	17	-10.06	14	-11.89
26	-10.18	31	-10.06	31	-11.67
27	-11.70	Feb. 15	- 9.80	Sept. 15	-11.96
Sept. 9	-12.90	29	- 9.50	30	-12.06
14	-12.15	Mar. 10	- 9.22	Oct. 20	-12.12
23	-12.96	22	- 8.37	22	-10.47
25	- 9.60	Apr. 7	- 8.51	29	-10.37
27	-12.08	24	- 6.84	Nov. 1	- 7.84
30	-10.22	26	- 8.47	15	- 8.08
Oct. 8	-10.87	May 1	- 8.80	28	- 6.38
19	- 9.61	5	- 6.35	29	- 7.33
31	-11.11	15	- 6.35	30	- 6.45
Nov. 10	-13.73	31	- 6.90	Dec. 15	- 4.78
23	-14.70	June 16	- 7.40	18	- 2.80
25	-11.55	19	- 9.32	21	- 3.47
27	-12.80	23	- 9.46	31	- 2.72
Dec. 2	- 9.86				

(A-6-1)11db2. City of Ogden, Huntsville, Weber County. Diameter $8\frac{1}{4}$ inches, depth 68 feet. Measuring point, top of instrument platform, 20.5 feet above land surface, and 4,853.11 feet above sea level. Ogden Valley report, no. 101.^{a/} A recording gage was maintained on this well from Sept. 26, 1932 to Oct. 14, 1935. Well was destroyed in 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 26, 1932	-10.06	June 24	- 8.40	Dec. 15	- 8.30
Oct. 1	-10.92	July 6	- 8.41	Jan. 1, 1934	- 8.33
12	-10.11	8	- 8.88	15	- 8.31
12	b/- 8.56	11	- 8.07	Feb. 1	- 8.29
15	- 7.70	15	- 9.01	15	- 8.21
Nov. 1	- 7.67	23	- 9.09	Mar. 1	- 8.07
15	- 7.88	30	-11.50	20	- 7.72
Dec. 1	- 7.80	Aug. 18	-11.85	27	- 9.23
15	- 8.00	23	- 8.67	Apr. 1	- 7.23
Jan. 1, 1933	- 7.86	25	- 9.52	5	- 7.30
15	- 7.80	30	- 9.53	8	- 9.15
Feb. 1	- 7.82	Sept. 2	-11.36	15	- 9.13
15	- 7.95	7	-11.41	18	- 7.09
Mar. 1	- 7.85	10	-11.91	22	- 9.10
15	- 7.62	16	-12.04	30	- 9.15
Apr. 1	- 7.33	18	-10.13	May 1	- 8.33
15	- 7.12	24	-12.16	6	- 8.13
May 1	- 6.75	30	- 8.19	10	- 9.24
15	- 6.81	Oct. 5	- 8.41	24	- 9.31
June 1	- 6.56	12	- 9.99	26	- 8.03
3	- 7.78	20	- 8.29	June 1	- 9.38
13	- 7.83	Nov. 1	- 8.26	7	- 9.43
15	- 8.81	15	- 8.37	10	- 8.43
19	- 8.97	Dec. 1	- 8.39	17	-11.50

^{a/} For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

^{b/} Oil added to well to prevent freezing.

(A-6-1-11db2. City of Ogden.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 19, 1934	- 9.50	Nov. 9, 1934	- 9.89	July 26, 1935	- 9.51
23	-11.66	10	-10.60	28	-11.05
25	- 9.76	11	- 9.98	29	- 9.25
28	- 9.71	19	- 9.84	31	-11.00
July 1	-11.72	20	-10.71	Aug. 4	-11.12
11	-12.01	Dec. 23	-10.95	5	- 9.48
13	-12.80	28	-10.00	7	-10.94
22	-12.86	Jan. 1, 1935	-10.91	18	-11.37
24	- 9.46	28	-10.71	19	- 9.89
Aug. 1	-13.06	Feb. 10	- 9.48	21	-11.30
9	-13.14	15	-10.28	25	-11.30
12	-12.32	Mar. 1	- 9.14	26	-10.00
14	-13.15	15	- 8.60	27	-11.14
25	-13.12	Apr. 1	- 8.03	Sept. 9	-12.28
26	-13.36	15	- 7.75	15	-11.77
Sept. 10	-13.60	May 1	- 7.25	23	-12.34
13	-13.33	23	- 6.96	25	-10.50
21	-13.75	24	- 7.47	27	-11.57
26	-10.09	June 10	- 7.50	Oct. 1	-10.27
28	-10.87	15	- 9.35	8	-10.54
Oct. 19	-10.89	23	- 7.80	13	- 9.84
20	-10.10	July 9	- 7.79		
31	- 9.65	18	- 9.44		

(A-6-1)11db3. City of Ogden, Huntsville, Weber County. Diameter 18 inches, depth 4 feet. Measuring point, top of instrument platform, 4.0 feet above land surface and 4,835.81 feet above sea level. Ogden Valley report, no. 100.^a/ A recording gage was maintained on this well from Sept. 24, 1932, to Feb. 7, 1934. Well was destroyed in 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 25, 1932	- 4.14	Apr. 23, 1933	- 3.76	Sept. 6	- 3.42
Oct. 7	- 3.57	29	- 3.06	24	- 4.06
20	- 3.72	May 5	- 3.70	Oct. 1	- 4.02
Nov. 1	- 3.92	14	- 3.98	20	- 3.66
15	- 4.01	20	- 2.95	Nov. 1	- 3.80
Dec. 1	- 4.07	June 7	- 4.08	15	- 3.81
15	- 4.06	22	- 3.84	Dec. 1	- 4.01
Mar. 9, 1933	- 4.13	July 1	- 3.65	15	- 3.99
27	- 3.82	15	- 3.97	Jan. 1, 1934	- 3.91
Apr. 7	- 3.11	Aug. 1	- 3.87	15	- 4.03
10	- 3.66	15	- 3.65	Feb. 1	- 4.02

(A-6-1)11dc. U. S. Bureau of Reclamation, Huntsville, Weber County. Diameter 10 inches, depth 152 feet. Measuring point, top of instrument platform, 3.0 feet above land surface and 4,883.73 feet above sea level. Recording gage operated on this well since Oct. 17, 1935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 18, 1935	-43.90	Dec. 31, 1935	-42.91	Mar. 15, 1936	-42.51
31	-44.14	Jan. 14, 1936	-43.02	31	-42.34
Nov. 10	-44.84	15	-42.83	Apr. 15	-41.87
24	-46.11	31	-42.90	30	-41.63
25	-39.58	Feb. 10	-43.03	May 15	-41.18
Dec. 13	-42.93	28	-42.41	31	-40.97

^a/ For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

(A-6-1)11dc. U. S. Bureau of Reclamation.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 15, 1936	-40.91	Sept. 15, 1936	-44.34	Nov. 30, 1936	-39.88
30	-41.56	30	-44.52	Dec. 15	-38.35
July 15	-42.41	Oct. 15	-44.69	18	-35.97
31	-43.33	30	-44.62	31	-36.01
Aug. 15	-43.84	Nov. 1	-41.39		
31	-44.12	15	-41.31		

(A-6-1)11dd. Herman Larsen, Huntsville, Weber County. Depth 15.9 feet. Measuring point, top of platform, 0.5 foot above land surface. Ogden Valley report, no. 107.^a/ Depth to water: Sept. 30, 1935, 8.73 feet; Oct. 8, 1936, 11.72 feet.

(A-6-1)12aa1. City of Ogden, Huntsville, Weber County. Diameter $8\frac{1}{4}$ inches, depth 108 feet. Measuring point, top of instrument shelf, 4.0 feet above land surface and 4,884.12 feet above sea level. Ogden Valley report, no. 82.^a/ Recording gage operated on this well since Sept. 16, 1932. See Water-Supply Paper 777, page 239, for record prior to 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 1, 1936	-14.32	May 15, 1936	- 9.15	Sept. 18, 1936	- 9.38
15	-15.08	31	- 8.85	30	- 9.38
31	-15.49	June 16	- 8.95	Oct. 15	- 9.01
Feb. 19	-15.61	30	- 9.48	30	- 8.62
Mar. 10	-14.52	July 15	- 9.74	Nov. 1	- 8.22
20	-13.46	31	-10.30	15	- 8.17
25	-11.49	Aug. 15	-10.47	30	- 8.33
31	-10.56	31	-10.50	Dec. 15	- 8.53
Apr. 15	- 9.52	Sept. 6	-10.55	31	- 8.67
30	- 9.26				

(A-6-1)12aa2. City of Ogden, Huntsville, Weber County. Diameter $8\frac{1}{4}$ inches, depth 40 feet. Measuring point, top of instrument platform, 9.0 feet above land surface and 4,889.00 feet above sea level. Ogden Valley report, no. 80.^a/ A recording gage was maintained on this well from Sept. 14, 1932 to Nov. 17, 1934. Well was capped in 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 29, 1932	-20.19	July 1, 1933	-17.99	Mar. 15, 1934	-20.91
Oct. 15	-19.92	15	-18.29	Apr. 1	-19.80
Nov. 1	-19.30	Aug. 1	-19.09	15	-19.07
15	-19.27	15	-19.67	May 1	-18.24
Dec. 1	-19.06	Sept. 1	-20.04	15	-18.66
15	-19.70	16	-20.55	June 1	-19.26
Jan. 1, 1933	-20.46	Oct. 1	-20.45	15	-19.99
15	-21.02	15	-20.29	July 1	-20.75
Feb. 1	-22.22	Nov. 1	-19.79	15	-21.74
16	-22.92	15	-19.71	Aug. 1	-23.01
Mar. 1	-23.50	Dec. 1	-19.72	15	-24.13
15	-23.68	15	-19.61	Sept. 1	-25.55
Apr. 1	-22.32	Jan. 1, 1934	-20.20	15	-26.55
15	-19.53	15	-20.71	Oct. 1	-27.39
May 1	-18.67	Feb. 1	-21.30	15	-27.13
15	-18.57	15	-21.77	Nov. 1	-26.08
June 1	-18.18	Mar. 1	-21.69	17	-24.15
15	-17.93				

^a/ For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

(A-6-1)12aa3. City of Ogden, Huntsville, Weber County. Diameter 18 inches, depth 4 feet. Measuring point, top of instrument platform, 4.0 feet above land surface and 4,882.70 feet above sea level. Ogden Valley report, no. 81.^a/ A recording gage was maintained on this well from Sept. 14, 1932 to Jan. 31, 1934. Well was destroyed in 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1932	- 4.12	Apr. 1, 1933	- 3.74	Oct. 15, 1933	- 4.68
21	- 4.32	15	- 3.93	Nov. 1	- 4.19
Oct. 1	- 4.37	May 1	- 3.92	15	- 4.18
5	- 4.11	15	- 4.01	Dec. 1	- 4.29
Nov. 1	- 4.27	June 1	- 4.15	15	- 4.20
20	- 4.32	15	- 3.77	Jan. 1, 1934	- 4.05
Dec. 1	- 4.37	July 1	- 3.83	15	- 4.67
15	- 4.64	15	- 3.85	31	- 4.86
Jan. 1, 1933	- 4.60	Aug. 1	- 3.81	Sept. 12	- 6.15
11	- 4.85	15	- 4.20	19	- 6.50
Feb. 16	- 5.42	Sept. 1	- 4.50	28	- 6.52
Mar. 8	- 5.72	15	- 4.39	Oct. 5	- 6.52
15	- 4.73	Oct. 1	- 4.58		

(A-6-1)12aa1. J. G. Read & Bros., Huntsville, Weber County. Depth 43.5 feet. Measuring point, top of casing at land surface. Ogden Valley report, no. 88.^a/ Pressure head: Sept. 30, 1935, 2.10 feet; Oct. 8, 1936, found destroyed.

(A-6-1)13ab. Huntsville, Weber County. Depth 22.5 feet. Measuring point, top of brick curb, at land surface. Ogden Valley report, no. 113.^a/ Depth to water: Sept. 30, 1935, 14.90 feet; Oct. 8, 1936, 13.67 feet.

(A-6-1)14dd. Simon Jensen, Huntsville, Weber County. Diameter 6 inches, depth 132 feet. Measuring point, top of casing, 1.0 foot above land surface. Ogden Valley report, no. 109.^a/ Depth to water: Sept. 30, 1935, 41.95 feet; Oct. 8, 1936, 38.95 feet.

(A-6-2)6aa. Eden, Weber County. Depth 24.9 feet. Measuring point, top of platform, at land surface. Ogden Valley report, no. 71.^a/ Depth to water: Sept. 30, 1935, 10.20 feet; Oct. 8, 1936, 5.95 feet.

(A-6-2)6dd1. City of Ogden, Huntsville, Weber County. Diameter 8 $\frac{1}{4}$ inches, depth 100 feet. Measuring point, top of instrument platform, 5.0 feet above land surface, and 4,955.96 feet above sea level. Ogden Valley report, no. 74.^a/ Recording gage operated on this well since Sept. 27, 1932.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	-16.20	Feb. 29, 1936	-17.30	July 15, 1936	-13.60
5	-13.	Mar. 13	-16.30	22	-14.57
10	-15.95	20	-10.88	24	-13.96
25	-16.85	30	-10.28	31	-14.58
31	-16.02	Apr. 15	- 9.90	Aug. 1	-13.87
Sept. 10	-16.89	30	-11.03	7	-14.08
27	-17.10	May 13	-11.89	13	-15.09
Oct. 10	-14.28	20	- 9.51	16	-15.32
24	-13.30	25	-10.34	21	-13.47
Nov. 15	-16.62	31	-10.23	28	-15.21
30	-17.47	June 12	-11.01	Sept. 8	-15.33
Dec. 15	-17.86	15	- 9.90	17	-10.97
31	-18.22	18	-11.13	21	-13.43
Jan. 15, 1936	-18.41	22	-10.24	26	-12.21
31	-18.43	July 4	-13.11	Oct. 9	-14.95
Feb. 15	-18.36	6	-12.47	15	-11.28

^a/ For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

(A-6-2)6ddl. City of Ogden.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 30, 1936	-14.97	Nov. 15, 1936	-15.72	Dec. 15, 1936	-17.17
Nov. 2	-14.74	30	-16.55	31	-17.68

(A-6-2)6dd2. City of Ogden, Huntsville, Weber County. Diameter 8 $\frac{1}{4}$ inches, depth 14 feet. Measuring point, top of instrument platform, 5.0 feet above land surface and 4,954.92 feet above sea level. Ogden Valley report, no. 73.^a/ A recording gage was maintained on this well from Oct. 14, 1932 to June 14, 1934.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 14, 1932	- 9.92	June 4, 1933	- 5.92	Jan. 4, 1934	-12.53
30	-12.23	15	- 6.20	15	-12.50
Nov. 5	-11.54	July 1	- 7.97	Feb. 1	-12.64
15	-11.87	15	-10.30	20	-12.44
Dec. 1	-11.77	31	-11.10	Mar. 1	-10.25
8	-12.64	Aug. 15	-11.95	15	-10.06
Jan. 1, 1933	-13.12	Sept. 1	-11.17	Apr. 5	- 5.74
15	-13.31	10	- 9.07	13	- 8.05
Feb. 1	-13.55	18	-11.45	29	- 5.82
15	-13.62	28	- 7.47	May 15	-10.64
Mar. 1	-13.60	Oct. 10	-10.74	June 1	-12.03
10	-13.54	30	-12.07	13	-10.90
Apr. 6	- 5.80	Nov. 10	-11.80	Sept. 12	-13.54
15	- 5.68	20	-12.20	19	-13.30
May 1	- 5.94	Dec. 1	-12.17	28	-13.50
13	- 6.50	15	-12.34	Oct. 5	-13.33
June 1	- 8.67				

(A-6-2)7cb. L. K. Peterson, Huntsville, Weber County. Diameter 30 inches, depth 10.6 feet. Measuring point, top of curb, 2.4 feet above land surface. Ogden Valley report, no. 84.^a/ Depth to water: Sept. 30, 1935, 9.66 feet; Oct. 8, 1936, 6.6 feet.

(A-6-2)16ba. Golden Bingham, Huntsville, Weber County. Depth 31.2 feet. Measuring point, top of platform, 1.0 foot above land surface. Ogden Valley report, no. 139.^a/ Depth to water: Sept. 30, 1935, 27.46 feet; Oct. 8, 1936, 23.35 feet.

(A-6-2)18ac. Charles Felt, Huntsville, Weber County. Depth 16.3 feet. Measuring point, top of plank over well, at land surface. Ogden Valley report, no. 125.^a/ Depth to water: Oct. 8, 1936, 15.90 feet.

(A-6-2)21cc. C. D. Shupe, Huntsville, Weber County. Depth 19.3 feet. Measuring point, top of curb, at land surface. Ogden Valley report, no. 146.^a/ Depth to water: Sept. 30, 1935, 18.35 feet; Oct. 8, 1936, 14.6 feet.

(A-7-1)20ac. John Ward, Liberty, Weber County. Depth 59.5 feet. Measuring point, top of concrete curb, 1.0 foot above land surface. Ogden Valley report, no. 56.^a/ Depth to water: Sept. 30, 1935, 58.85 feet; Oct. 8, 1936, 57.36 feet.

(A-7-1)29ba. Elmer Gardner, Liberty, Weber County. Depth 19 feet. Measuring point, top of platform, 0.5 foot above land surface. Ogden Valley report, no. 57.^a/ Depth to water: Sept. 30, 1935, 17.46 feet; Oct. 8, 1936, 18.57 feet.

^a/ For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

(A-7-1)35cb. Eden, Weber County. Depth 20 feet. Measuring point, top of platform, 0.2 foot above land surface. Ogden Valley report, no. 59.^a/ Depth to water: Sept. 30, 1935, 17.05 feet; Oct. 8, 1936, 16.02 feet.

(A-7-1)35cd. Eden, Weber County. Depth 19.7 feet. Measuring point, top of platform, 0.5 foot above land surface. Ogden Valley report, no. 62.^a/ Depth to water: Sept. 30, 1935, 14.34 feet; Oct. 8, 1936, 13.53 feet.

(A-7-1)36cb. Eden, Weber County. Depth 11.4 feet. Measuring point, top of platform, 0.2 foot above land surface. Ogden Valley report, no. 65.^a/ Depth to water: Sept. 30, 1935, 10.90 feet; Oct. 8, 1936, 6.51 feet.

(A-9-1)10ad. Drought Relief Administration, Avon, Cache County. Diameter 10 inches, depth 595 feet. Measuring point, top of coupling on casing, 3.0 feet below land surface. Depth to water: Oct. 14, 1936, 27.14 feet; Dec. 14, 1936, 26.33 feet.

(A-9-7)16ba. Drought Relief Administration, Woodruff, Rich County. Diameter 48 inches, depth 50 feet. Measuring point, top of wood curb, 1.2 feet above land surface. Depth to water: Oct. 15, 1936, 35.69 feet.

(A-9-7)16bd. Drought Relief Administration, Woodruff, Rich County. Diameter 48 inches, depth 50 feet. Measuring point, top of wood curb, 1.3 feet above land surface. Depth to water: Oct. 15, 1936, 35.78 feet.

(A-10-1)4ab. Ole H. Anderson, Hyrum, Cache County. Diameter 12 inches, depth 240 feet. Measuring point, top of coupling on casing, 1.2 feet above land surface. Depth to water: Oct. 14, 1936, 10.52 feet; Dec. 14, 1936, 10.72 feet.

(A-11-1)3bd. Drought Relief Administration, Logan, Cache County. Diameter 12 $\frac{1}{2}$ inches, depth 140 feet. Measuring point, bottom of inspection opening, 0.5 foot above land surface. Depth to water: Oct. 13, 1936, 31.83 feet; Dec. 13, 1936, 32.42 feet.

(A-11-1)5ab1. W. H. Baxter, Logan, Cache County. Diameter 3 inches, depth 60 feet. Measuring point, top of coupling on casing, 0.7 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 14, 1936	b/+15.15	Oct. 28, 1936	+15.75	Nov. 20, 1936	+14.9
23	b/+15.2	31	+15.6	Dec. 7	+15.0
25	+15.7	Nov. 15	+15.0	14	+15.2

(A-11-1)5ab2. W. H. Baxter, Logan, Cache County. Diameter 2 inches, depth 128 feet. Measuring point, top of tee on casing, 2.3 feet above land surface. Pressure head: Oct. 14, 1936, 33.55 feet. (found leaking)

(A-11-1)5cc. Utah State Experiment Station, Logan, Cache County. Diameter 3 inches, depth 165 feet. Measuring point, top of ell on casing, 3.0 feet above land surface. Pressure head: Oct. 14, 1936, 38.8 feet.

^a/ For measurements prior to Aug. 1, 1935, see Leggette, R. M., and Taylor, G. H., Geology and ground-water resources of Ogden Valley, Utah: U. S. Geol. Survey Water-Supply Paper 796-D, 1937.

^b/ Found flowing.

(A-11-1)8dac4. Amalgamated Sugar Co., Logan, Cache County. Diameter 3 inches, depth 154 feet. Measuring point, cross on wall of coal silo, 2.5 feet above land surface. Full pressure head could not be measured, owing to leaking valve.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 1, 1935	+ 9.1	Mar. 5, 1936	+ 8.85	June 26, 1936	+10.5
6	+ 9.35	May 9	+ 9.55	Aug. 14	+14.1

Observations discontinued because of cracked gate valve.

(A-11-1)8dda2. Amalgamated Sugar Co., Logan, Cache County. Diameter 4 inches, depth 87 feet. Measuring point, top of ell, 2.3 feet above land surface and 4,474.44 feet above sea level. Pressure head: May 9, 1936, 10.25 feet.

(A-11-1)8dda3. Amalgamated Sugar Co., Logan, Cache County. Diameter 5 inches, depth 85 feet. Measuring point, top of ell on casing, 2.6 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 1, 1935	+ 8.6	May 9, 1936	+ 9.65	Oct. 11, 1936	a/+12.7
Dec. 6	+ 8.9	June 26	a/+11.0	Dec. 13	+12.15
Mar. 5, 1936	+ 8.6	Aug. 14	+12.5		

(A-11-1)8ddb2. Amalgamated Sugar Co., Logan, Cache County. Diameter 3 inches, depth 90 feet. Measuring point, top of casing, 0.7 foot above land surface and 4,472.15 feet above sea level. Pressure head: Oct. 11, 1936, 14.15 feet.

(A-11-1)17bd. M. V. Hanson, Logan, Cache County. Diameter 2 inches, depth 145 feet. Measuring point, top of ell on pipe, 1.0 foot above land surface. Pressure head: Mar. 5, 1936, 1.45 feet (found flowing).

(A-11-1)18dd. Lovenus Olsen, Logan, Cache County. Diameter 2 inches, depth 145 feet. Measuring point, top of coupling on casing, 1.3 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 5, 1936	+ 1.73	June 26, 1936	+ 3.70	Oct. 11, 1936	+ 6.95
May 9	+ 2.34	Aug. 13	+ 5.8	Dec. 14	+ 6.9

(A-11-1)30bb1. Leroy S. Hill, Logan, Cache County. Diameter 2½ inches, depth 200 feet. Measuring point, top of casing, at land surface. Pressure head: Oct. 14, 1936, 3.25 feet (found flowing).

(A-11-1)30bb2. Leroy S. Hill, Logan, Cache County. Diameter 2 inches, depth 200 feet. Measuring point, base of pitcher pump, 2.3 feet above land surface. Depth to water: Oct. 14, 1936, 3.35 feet.

(A-11-7)9cd1. F. H. Jackson, Randolph, Rich County. Diameter 6 inches, depth 25 feet. Measuring point, bottom of slot in casing, 0.3 foot above land surface. Depth to water: Oct. 15, 1936, 10.80 feet.

(A-11-7)9cd2. F. H. Jackson, Randolph, Rich County. Diameter 2 inches, depth 310 feet. Measuring point, bottom of nipple in tee, 4.6 feet above land surface. Depth to water: Oct. 15, 1936, 14.95 feet.

(A-12-1)4aal. Drought Relief Administration, Smithfield, Cache County. Diameter 12½ inches, depth 166 feet. Measuring point, top of casing, 0.5 foot below land surface. Depth to water: Oct. 12, 1936, 0.74 foot; Dec. 13, 1936, 5.91 feet.

a/ Found flowing.

(A-12-1)4aa2. Nora Johnson, Smithfield, Cache County. Diameter 2 inches, depth 120 feet. Measuring point, top of protector on casing, 1.0 foot above land surface. Depth to water: Oct. 12, 1936, 2.75 feet; Dec. 13, 1936, 7.98 feet.

(A-12-1)16bd. Logan City Airport, Benson, Cache County. Diameter 2 inches. Measuring point, top of ell on casing, 2.5 feet above land surface. Pressure head: Oct. 12, 1936, 9.65 feet (found flowing); Dec. 13, 1936, 15.35 feet (found flowing).

(A-12-1)16cbl. Benson Irrigation Co., Benson, Cache County. Diameter 4 inches, depth 280 feet. Measuring point, top of ell on casing, 1.7 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 4, 1935	a/+37.3	Mar. 5, 1936	b/+39.7	Aug. 14, 1936	b/+48.0
Nov. 1	+40.7	May 10	b/+40.0	Oct. 12	b/+47.85
Dec. 6	+40.8	June 26	a,b/+42.85	Dec. 13	b/+47.2

(A-12-1)16cb2. Benson Irrigation Co., Benson, Cache County. Diameter 4 inches, depth 170 feet. Measuring point, top of casing, 4.0 feet below land surface. Pressure head: Oct. 4, 1935, 9.4 feet (found flowing).

(A-12-1)28cd. Parley P. Jones, Logan, Cache County. Diameter 2 inches, depth 75 feet. Measuring point, top of casing, 1.0 foot below land surface. Pressure head: Oct. 13, 1936, 2.20 feet (found flowing); Dec. 13, 1936, 1.75 feet (found flowing).

(A-12-1)31db. Richard Peterson, Logan, Cache County. Diameter 3 inches. Measuring point, top of ell on casing, 2.3 feet above land surface. Pressure head: Oct. 13, 1936, 29.7 feet (found leaking); Dec. 14, 1936, 31.9 feet (found leaking).

(A-12-1)33ba. Newel Andrews, Logan, Cache County. Diameter 2 inches. Measuring point, top of casing, 0.5 foot above land surface. Pressure head: Oct. 13, 1936, 4.6 feet (found flowing).

(A-12-7)26bb1. William Hoffman, Randolph, Rich County. Diameter 6 inches, depth 137 feet. Measuring point, top of plank over well, at land surface. Depth to water: Oct. 15, 1936, 8.85 feet.

(A-12-7)26bb2. William Hoffman, Randolph, Rich County. Diameter 6 inches, depth 60 feet. Measuring point, top of concrete base, 0.7 foot above land surface. Depth to water: Oct. 15, 1936, 9.55 feet.

(A-13-1)20bd1. James Hind, Smithfield, Cache County. Diameter 2 inches, depth 120 feet. Measuring point, top of ell above valve, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 6, 1935	+22.8	May 10, 1936	a,b/+22.2	Aug. 14, 1936	a,b/+31.7
Mar. 5, 1936	+20.95	June 26	a,b/+27.3	Oct. 12	b/+28.6

Observations discontinued because of cracked gate valve.

(A-13-1)20bd2. James Hind, Smithfield, Cache County. Diameter 2½ inches, depth 140 feet. Measuring point, top of ell on casing, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 6, 1935	+23.4	June 26, 1936	+28.0	Oct. 12, 1936	+30.0
Mar. 5, 1936	+21.65	Aug. 14	+32.2	Dec. 13	+27.45
May 10	+23.05				

a/ Found flowing.

b/ Valve leaking during test.

(A-13-1)29ac1. J. C. Cannell, Smithfield, Cache County. Diameter 2 inches, depth 160 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 5, 1935	a/+ 1.17	Mar. 5, 1936	- 3.57	Aug. 14, 1936	a/+9.9
Nov. 1	a/+ .02	May 10	- 1.25	Oct. 12	a/+6.7
Dec. 6	- .88	June 26	a/+ 6.3	Dec. 13	a/+3.55

(A-13-1)29ac2. J. C. Cannell, Smithfield, Cache County. Diameter 1½ inches, depth 96 feet. Measuring point, top of ell on casing, 0.6 foot above land surface. Pressure head: Oct. 12, 1936, 4.25 feet (found flowing).

(A-13-1)31cc. W. G. Reese, Benson, Cache County. Diameter 2 inches, depth 457 feet. Measuring point, top of outlet pipe, 1.2 feet above land surface. Pressure head is probably modified by the pressure of gas (methane) in this well. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 5, 1935	+11.25	Mar. 5, 1936	+11.0	Aug. 14, 1936	+10.65
Nov. 1	+11.1	May 10	+10.15	Oct. 12	+11.0
Dec. 6	+10.55	June 26	+10.2	Dec. 13	+10.7

(A-13-5)21ad. Drought Relief Administration, Meadowville, Rich County. Diameter 15½ inches, depth 70 feet. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: Oct. 15, 1936, 4.95 feet.

(A-13-5)22bd. Willis Bros., Meadowville, Rich County. Diameter 6 inches, depth 60 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Oct. 15, 1936, 19.24 feet.

(A-13-5)22da. Max Breen, Meadowville, Rich County. Diameter 6 inches, depth 135 feet. Measuring point, top of casing, at land surface. Depth to water: Oct. 15, 1936, 19.45 feet.

(A-13-5)25db. Willis Bros., Laketown, Rich County. Diameter 6 inches, depth 60 feet. Measuring point, top of casing, 1.0 foot below land surface. Depth to water: Oct. 15, 1936, 4.98 feet.

(A-13-6)30bb. Rich County, Laketown, Rich County. Diameter 6 inches, depth 125 feet. Measuring point, top of hole in casing, 1.8 feet above land surface. Pressure head: Oct. 15, 1936, 4.57 feet (found flowing).

(A-13-6)31bb. J. A. Cheney, Laketown, Rich County. Diameter 48 inches, depth 21 feet. Measuring point, top of platform, at land surface. Depth to water: Oct. 15, 1936, 19.30 feet.

(A-14-1)22bb. H. H. Merrill, Richmond, Cache County. Diameter 2 inches, depth 102 feet. Measuring point, top of casing, 2.7 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 6, 1936	+ 6.9	June 26, 1936	+14.3	Oct. 12, 1936	+ 8.9
May 10	+ 9.3	Aug. 14	+11.7	Dec. 13	+ 7.4

a/ Found flowing.

(A-14-1)34ad. J. W. Funk and others, Richmond, Cache County. Diameter 12½ inches, depth 150 feet. Measuring point, top of casing, 1.8 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 5, 1935	-15.02	Mar. 6, 1936	-14.25	Aug. 14, 1936	- 5.40
Nov. 1	-18.01	May 10	- 9.22	Oct. 12	-13.02
Dec. 6	-18.06	June 26	- 4.75	Dec. 13	-16.75

(A-14-1)34ca. Victor Johnson, Richmond, Cache County. Diameter 3 inches. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: Oct. 12, 1936, 10.65 feet (found flowing); Dec. 13, 1936, 16.45 feet (found flowing).

(A-14-5)16cd. Mrs. David Cook, Garden City, Rich County. Diameter 6 inches, depth 70 feet. Measuring point, top of porch floor, 1.5 feet above land surface. Depth to water: Oct. 15, 1936, 19.13 feet.

(A-14-5)21bd. Alex Johnson, Garden City, Rich County. Diameter 6 inches, depth 40 feet. Measuring point, top of casing, 5.0 feet below land surface. Depth to water: Oct. 15, 1936, 14.62 feet.

(A-14-5)21bd. J. W. Gibbons, Garden City, Rich County. Diameter 6 inches, depth 40 feet. Measuring point, top of casing, 0.6 foot above land surface. Depth to water: Oct. 15, 1936, 16.28 feet.

(A-14-5)21bd. Hodges, Garden City, Rich County. Diameter 6 inches, depth 38 feet. Measuring point, top of casing, 0.3 foot above land surface. Depth to water: Oct. 15, 1936, 12.51 feet.

(A-14-5)21cd. C. W. Pope, Garden City, Rich County. Diameter 6 inches, depth 35 feet. Measuring point, top of casing, 2.5 feet above land surface. Depth to water: Oct. 15, 1936, 6.72 feet.

(A-14-5)34cc. Drought Relief Administration, Garden City, Rich County. Diameter 6 inches, depth 135 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Oct. 15, 1936, 17.95 feet.

(B-1-1)2aa2. L. H. Davis, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.7 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 23, 1936	-1.16	May 7, 1936	-2.28	May 18, 1936	-2.92
Apr. 23	-1.21	9	-2.23	21	-3.14
29	-1.99	11	-2.27	27	-3.23
May 1	-2.33	12	-2.47	June 3	-3.24
2	-2.40	13	-2.59	July 22	-1.75
4	-2.32	14	-2.77	Oct. .5	-1.11
5	-2.27	15	-2.76	Dec. 21	a/+ .85
6	-2.30	16	-2.92		

(B-1-1)2abl. E. T. Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 332 feet. Measuring point, top of casing, 0.6 foot above land surface and 4,268.22 feet above sea level. Pressure head: Mar. 19, 1936, 5.75 feet (found flowing).

(B-1-1)6cb. Rudy Gun Club, North Salt Lake, Salt Lake County. Diameter 2 inches, depth 365 feet. Measuring point, top of ell on casing, 2.5 feet above land surface and 4,212.96 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 28, 1931	+17.3	Dec. 15, 1931	a/+16.29	Mar. 7, 1932	a/+16.58
Oct. 10	a/+16.65	Jan. 11, 1932	a/+16.29	Apr. 11	a/+16.29
Nov. 13	a/+16.29	Feb. 5	a/+16.29	May 11	a/+16.58

a/ Found flowing.

(B-1-1)6cb. Rudy Gun Club.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 9, 1932	a/+17.1	Mar. 20, 1933	a/+15.87	July 15, 1935	a/+15.0
July 8	a/+16.51	May 19	a/+16.15	Oct. 2	a/+15.3
Aug. 12	a/+16.51	June 20	a/+16.29	Feb. 28, 1936	a/+14.85
Sept. 13	a/+15.87	Nov. 13	a/+16.73	Apr. 13	a/+15.0
Oct. 6	a/+16.01	Aug. 13, 1934	a/+16.51	June 6	a/+14.8
Nov. 3	a/+16.29	Oct. 29	a/+15.9	Aug. 20	a/+14.7
Dec. 10	a/+16.29	May 6, 1935	a/+14.9	Oct. 2	a/+14.7
Jan. 11, 1933	a/+16.01	June 10	a/+15.4	Dec. 7	a/+14.9

(B-1-1)9da. Julius Turrill, North Salt Lake, Salt Lake County. Diameter 2½ inches. Measuring point, top of coupling on casing, 1.0 foot above land surface. Pressure head: Apr. 13, 1936, 20.0 feet (found flowing).

(B-1-1)32ad. Salt Lake City Corp., gun club, Salt Lake County. Diameter 2 inches, depth 106 feet. Measuring point, top of coupling on casing, 1.8 feet above land surface. Salt Lake City well 1393.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 25, 1935	b/+4.1	Mar. 5, 1936	b/+4.93	July 15, 1936	b/+4.9
Dec. 4	b/+4.15	14	b/+4.82	Aug. 20	+4.65
16	b/+4.3	Apr. 3	b/+4.85	26	b/+4.65
Jan. 3, 1936	b/+4.15	29	b/+5.04	Sept. 23	b/+4.5
24	b/+4.2	May 27	b/+5.2	Oct. 7	b/+4.1
Feb. 4	b/+4.3	June 6	+5.15	Dec. 7	+4.8
20	b/+4.4	24	b/+5.0	19	b/+4.8

(B-1-1)33cd. Salt Lake City Corp., airport, Salt Lake County. Diameter 2 inches. Measuring point, top of tee on casing, 0.5 foot below land surface. Salt Lake City well 1395.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 4, 1935	b/+11.75	May 27, 1936	b/+14.2	Sept. 23, 1936	b/+14.2
16	b/+11.5	June 24	b/+14.15	Oct. 7	b/+14.2
Mar. 14, 1936	b/+13.6	July 15	b/+14.2	Nov. 24	b/+14.5
Apr. 3	b/+14.8	Aug. 26	b/+14.25	Dec. 19	b/+14.7
29	b/+14.3				

(B-1-3)34bd. Royal Crystal Salt Co., Saltair, Salt Lake County. Diameter 6 inches, depth 840 feet. Measuring point, top of discharge pipe, 3.5 feet above land surface. Pressure head: Feb. 28, 1936, 19.0 feet (found flowing).

(B-2-1)21dc1. New State Gun Club, Woods Cross, Davis County. Diameter 2 inches, depth 454 feet. Measuring point, top of ell on casing, 1.9 feet above land surface. Pressure head: Mar. 25, 1936, 36.9 feet (found flowing).

(B-2-1)22cc1. J. A. Erickson, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 0.2 foot above land surface. Pressure head: Mar. 25, 1936, 10.9 feet (found flowing).

(B-2-1)22dd1. Ancil Hatch, Woods Cross, Davis County. Diameter 10 inches, depth 58 feet. Measuring point, top of ell on 1½-inch pipe, 0.3 foot above land surface. Depth to water: Mar. 13, 1936, 0.48 foot; Mar. 23, 1936, 0.39 foot.

(B-2-1)23dd1. Glen Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.0 foot above land surface and 4,242.51 feet above sea level. Pressure head: Apr. 9, 1936, 25.7 feet.

a/ Found flowing.

b/ Measurements by Salt Lake City Corporation.

(B-2-1)24ca. William Hepworth, Woods Cross, Davis County. Diameter $3\frac{1}{2}$ inches, depth 217 feet. Measuring point, top of ell on casing, 0.8 foot above land surface. Pressure head: Oct. 18, 1935, 14.0 feet.

(B-2-1)24cb. Geo. B. Mann, Woods Cross, Davis County. Diameter 3 inches, depth 350? feet. Measuring point, top of ell on casing, 1.5 feet above land surface. Pressure head: Oct. 18, 1935, 37.4 feet; Dec. 5, 1935, 39.6 feet (valve leaking during test).

(B-2-1)24cd1. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 2 inches, depth 125 feet. Measuring point, top of ell over coupling, 1.8 feet above land surface. Pressure head: Apr. 10, 1936, 4.95 feet.

(B-2-1)24cd2. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 3 inches, depth 275 feet. Measuring point, top of ell on casing, 1.0 foot above land surface and 4,279.49 feet above sea level. Pressure head: Apr. 10, 1936, 9.25 feet.

(B-2-1)25ab1. W. S. Hatch, Woods Cross, Davis County. Measuring point, horizontal outlet of tee, at land surface. Depth to water: May 27, 1936, 3.65 feet.

(B-2-1)25ab2. W. S. Hatch, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of tee on casing, 1.3 feet above land surface. Depth to water: May 27, 1936, 7.40 feet.

(B-2-1)25ba1. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 3 inches, depth 150 feet. Measuring point, top of ell, 1.0 foot above land surface and 4,283.61 feet above sea level. Pressure head: Apr. 10, 1936, 5.0 feet.

(B-2-1)25ba2. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 2 inches, depth 100 feet. Measuring point, top of casing, at land surface and 4,284.5 feet above sea level. Pressure head: Apr. 10, 1936, 0.45 foot.

(B-2-1)25ba3. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 2 inches, depth 166 feet. Measuring point, top of tee on casing, 1.3 feet above land surface and 4,285.79 feet above sea level. Pressure head: Apr. 10, 1936, 2.35 feet (found flowing).

(B-2-1)25ba5. J. C. Wood, Woods Cross, Davis County. Diameter 2 inches, depth 155 feet. Measuring point, top of tee on casing, 0.7 foot above land surface and 4,288.91 feet above sea level. Pressure head: May 21, 1936, 2.67 feet.

(B-2-1)25ba6. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 2 inches, depth 100 feet. Measuring point, top of casing, at land surface and 4,279.95 feet above sea level. Pressure head: Apr. 10, 1936, 3.75 feet.

(B-2-1)25ba7. Wasatch Oil Refining Co., Woods Cross, Davis County. Diameter 2 inches, depth 100 feet. Measuring point, top of casing, at land surface and 4,279.04 feet above sea level. Pressure head: Apr. 10, 1936, 5.0 feet.

(B-2-1)25ba8. Clarence Winegar, Woods Cross, Davis County. Diameter 3 inches, depth 180 feet. Measuring point, top of sidewalk at land surface. Pressure head: Apr. 10, 1936, 11.7 feet.

(B-2-1)25ba9. C. J. Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 200 feet. Measuring point, top of tee on casing, 0.4 foot above land surface and 4,272.98 feet above sea level. Pressure head: Apr. 10, 1936, 15.0 feet.

(B-2-1)25ba10. J. H. Day, Woods Cross, Davis County. Diameter 3 inches, depth 262 feet. Measuring point, top of ell on casing, 0.7 foot above land surface and 4,272.25 feet above sea level. Pressure head: Apr. 10, 1936, 15.3 feet.

(B-2-1)25ba11. J. H. Day, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.1 feet above land surface. Pressure head: Apr. 10, 1936, 1.32 feet (found flowing).

(B-2-1)25ba12. A. W. Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 80 feet. Measuring point, top of upper tee, 0.3 foot above land surface. Pressure head: Apr. 10, 1936, 5.5 feet.

(B-2-1)25ba14. A. W. Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 260 feet. Measuring point, top of ell on pipe, 2.5 feet above land surface and 4,281.33 feet above sea level. Pressure head: Apr. 10, 1936, 5.25 feet (found flowing).

(B-2-1)25ba15. H. M. Reinhart, Woods Cross, Davis County. Diameter 1½ inches. Measuring point, top of outlet of tee, at land surface. Pressure head: Apr. 10, 1936, 5.1 feet.

(B-2-1)25ba16. Dell Burnham, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of reducer on casing, 1.0 foot above land surface. Pressure head: Apr. 10, 1936, 1.30 feet.

(B-2-1)25ba17. Myrtle Hatch, Woods Cross, Davis County. Diameter 1½ inches. Measuring point, top of ell on casing, 1.0 foot above land surface. Depth to water: Apr. 10, 1936, 2.73 feet.

(B-2-1)25ba18. Myrtle Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.7 foot above land surface and 4,289.60 feet above sea level. Depth to water: Apr. 10, 1936, 3.55 feet.

(B-2-1)25ba19. Myrtle Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 1.0 foot above land surface and 4,288.12 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 28, 1935	-2.32	May 2, 1936	a/+2.10	May 15, 1936	a/+2.77
Dec. 5	-1.19	4	a/+2.30	18	a/+2.65
Mar. 2, 1936	-1.39	5	a/+2.58	21	a/+3.37
13	-1.02	6	a/+2.73	21	a/+3.72
23	-.70	7	a/+2.86	June 25	a/+5.3
28	-.58	9	a/+3.10	July 11	a/+6.85
Apr. 6	-.17	11	a/+3.16	22	a/+5.4
23	a/+ .94	12	a/+2.97	Aug. 12	a/+4.9
29	a/+1.54	13	a/+2.58	Oct. 5	a/+5.55
May 1	a/+1.95	14	a/+2.60	Dec. 15	a/+5.7

(B-2-1)25ba21. Glen Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: May 27, 1936, 5.60 feet.

(B-2-1)25bb1. Denver & Rio Grande Western R.R., Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of cross on casing, 1.0 foot above land surface. Pressure head: Apr. 9, 1936, 13.55 feet (found flowing).

(B-2-1)25bb3. Douglas Sorenson, Woods Cross, Davis County. Diameter 1½ inches. Measuring point, top of ell on casing, 2.2 feet above land surface and 4,260.10 feet above sea level. Pressure head: Apr. 9, 1936, 12.2 feet.

(B-2-1)25bb4. Douglas Sorenson, Woods Cross, Davis County. Diameter 1½ inches, depth 100 feet. Measuring point, top of ell on pipe, at land surface and 4,261.54 feet above sea level. Pressure head: Apr. 9, 1936, 16.85 feet.

(B-2-1)25bb5. Richard F. Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 106 feet. Measuring point, top of ¾-inch pipe, 1.0 foot above land surface and 4,260.88 feet above sea level. Pressure head: Apr. 9, 1936, 11.9 feet.

(B-2-1)25bb6. Richard F. Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 246 feet. Measuring point, top of ell over tee, 1.1 feet above land surface and 4,262.17 feet above sea level. Pressure head: Apr. 9, 1936, 24.9 feet.

a/ Found flowing.

(B-2-1)25bb7. Mary E. Platt, Woods Cross, Davis County. Diameter $1\frac{1}{8}$ inches, depth 80 feet. Measuring point, top of ell on casing, 1.9 feet above land surface and 4,264.18 feet above sea level. Pressure head: Apr. 9, 1936, 9.7 feet (found flowing).

(B-2-1)25bb8. Caroline Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 127 feet. Measuring point, top of casing, 0.8 foot above land surface and 4,261.91 feet above sea level. Pressure head: Apr. 9, 1936, 10.3 feet (found flowing).

(B-2-1)25bb9. Reuben Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 140 feet. Measuring point, top of ell on casing, 2.5 feet above land surface. Pressure head: Apr. 10, 1936, 6.95 feet (found flowing; leaking during test).

(B-2-1)25bb10. Reuben Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 140 feet. Measuring point, top of tee on casing, 2.5 feet above land surface. Pressure head: Apr. 10, 1936, 10.25 feet (found flowing).

(B-2-1)25bc2. H. P. Hatch, Woods Cross, Davis County. Diameter $1\frac{1}{8}$ inches. Measuring point, top of casing, 1.2 feet above land surface and 4,265.42 feet above sea level. Pressure head: Mar. 28, 1936, 5.4 feet.

(B-2-1)25bc3. L. G. Atkinson, Woods Cross, Davis County. Diameter 3 inches, depth 100 feet. Measuring point, top of ell on casing, 1.2 feet above land surface and 4,267.62 feet above sea level. Pressure head: Mar. 27, 1936, 17.9 feet.

(B-2-1)25bc4. Henry Moss estate, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches. Measuring point, top of coupling on casing, 1.0 foot above land surface. Pressure head: Apr. 6, 1936, 5.4 feet.

(B-2-1)25bd1. W. W. Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of ell on casing, 2.0 feet above land surface. Pressure head: Apr. 10, 1936, 1.28 feet (found flowing).

(B-2-1)25bd2. W. W. Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, at land surface. Pressure head: Apr. 10, 1936, 7.8 feet.

(B-2-1)25bd3. Henry Moss estate, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.3 feet above land surface. Depth to water: Apr. 6, 1936, 0.59 foot.

(B-2-1)25bd4. Henry Moss estate, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, at land surface. Depth to water: Apr. 6, 1936, 2.36 feet.

(B-2-1)25bd5. Walter Hogan, Woods Cross, Davis County. Diameter $1\frac{1}{8}$ inches. Measuring point, top of casing, 2.0 feet below land surface. Depth to water: Apr. 6, 1936, 0.72 foot.

(B-2-1)25bd7. H. Q. Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of well cover, at land surface. Depth to water: May 21, 1936, 8.0 feet.

(B-2-1)25bd8. H. Q. Hatch, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches. Measuring point, lip of pitcher pump, 1.6 feet above land surface. Depth to water: May 21, 1936, 8.60 feet.

(B-2-1)25bd12. L. H. Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 200 feet. Measuring point, top of casing, 1.2 feet above land surface and 4,298.92 feet above sea level. Depth to water: May 21, 1936, 7.52 feet.

(B-2-1)25bd16. John L. Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 200 feet. Measuring point, top of coupling on casing, 3.0 feet below land surface. Depth to water: May 21, 1936, 12.73 feet; Oct. 5, 1936, 10.55 feet; Dec. 21, 1936, 10.51 feet.

(B-2-1)25bd19. G. & E. Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 78 feet. Measuring point, top of casing, 2.5 feet above land surface. Depth to water: May 27, 1936, 10.65 feet.

(B-2-1)25bd21. S. H. Smith, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 100 feet. Measuring point, top of casing, at land surface. Depth to water: May 27, 1936, 6.80 feet.

(B-2-1)25ca2. C. I. Hogan, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.3 feet above land surface. Depth to water: May 21, 1936, 10.68 feet.

(B-2-1)25ca4. Walter Hogan, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of flange under pump, 2.5 feet above land surface. Depth to water: Apr. 6, 1936, 3.75 feet.

(B-2-1)25ca7. Hyrum Hogan, Woods Cross, Davis County. Diameter 2 inches, depth 100 feet. Measuring point, lip of pitcher pump, 2.6 feet above land surface. Depth to water: May 21, 1936, 12.25 feet.

(B-2-1)25ca8. Hyrum Hogan, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches. Measuring point, top of casing, 2.0 feet above land surface. Depth to water: May 21, 1936, 10.73 feet.

(B-2-1)25ca9. Hyrum Hogan, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: May 21, 1936, 10.61 feet.

(B-2-1)25ca12. Adolphus Ellis, Woods Cross, Davis County. Diameter 2 inches. Measuring point, lip of pitcher pump, 2.6 feet above land surface. Depth to water: May 21, 1936, 13.49 feet.

(B-2-1)25cb2. L. G. Atkinson, Woods Cross, Davis County. Diameter 3 inches, depth 143 feet. Measuring point, top of ell on casing, 0.6 foot above land surface and 4,269.29 feet above sea level. Pressure head: Mar. 27, 1936, 13.3 feet.

(B-2-1)25cb4. N. R. Fox, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of ell on casing, 0.7 foot above land surface and 4,272.51 feet above sea level. Pressure head: Mar. 18, 1936, 8.25 feet (found flowing).

(B-2-1)25cb5. D. Hogan, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 60 feet. Measuring point, lip of pitcher pump, 2.0 feet above land surface. Pressure head: Apr. 6, 1936, 2.90 feet (found flowing).

(B-2-1)25cb6. A. D. Eakle, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches. Measuring point, lip of pitcher pump, 2.3 feet above land surface. Pressure head: Apr. 6, 1936, 1.70 feet (found flowing).

(B-2-1)25cc1. Katherine Snyder, Woods Cross, Davis County. Diameter 3 inches, depth 97 feet. Measuring point, top of gate valve, 2.0 feet above land surface. Depth to water: Apr. 24, 1936, 0.57 foot.

(B-2-1)25cc2. Katherine Snyder, Woods Cross, Davis County. Diameter 3 inches, depth 100 feet. Measuring point, top of casing, at land surface. Pressure head: Apr. 24, 1936, 7.0 feet (found flowing).

(B-2-1)25cd1. Glen Moss, Woods Cross, Davis County. Diameter 3 inches, depth 91 feet. Measuring point, top of flange on casing, 3.5 feet below land surface and 4,305.62 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 18, 1936	-19.18	May 5, 1936	-16.29	May 14, 1936	-15.60
23	-19.03	6	-16.28	15	-15.55
Apr. 23	-17.88	7	-16.15	18	-15.44
29	-17.25	9	-15.95	21	-15.18
May 1	-17.17	11	-15.95	27	-14.77
2	-16.98	12	-15.82	Oct. 5	-12.35
4	-16.60	13	-15.80	Dec. 21	-12.22

(B-2-1)25cd2. Doyle McClellan, Woods Cross, Davis County. Diameter 3 inches, depth 100 feet. Measuring point, top of pump base, 0.5 foot above land surface and 4,299.02 feet above sea level. Depth to water: May 21, 1936, 9.18 feet.

(B-2-1)25cd6. Green, Woods Cross, Davis County. Diameter 60 inches, depth 26 feet. Measuring point, concrete floor of pit, 8.5 feet below land surface. Depth to water: Apr. 7, 1936, 13.72 feet.

(B-2-1)25cd7. Eugene Bair, Woods Cross, Davis County. Diameter 48 inches, depth 30 feet. Measuring point, top of curb, 0.2 foot above land surface and 4,311.00 feet above sea level. Depth to water: Apr. 7, 1936, 9.7 feet.

(B-2-1)26aa1. Alvin Winegar, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of ell on casing, 1.5 feet above land surface and 4,244.06 feet above sea level. Pressure head: Apr. 9, 1936, 23.9 feet.

(B-2-1)26aa2. James Layton, Woods Cross, Davis County. Diameter 2 inches, depth 163 feet. Measuring point, top of tee on casing, 2.5 feet above land surface and 4,245.83 feet above sea level. Pressure head: Apr. 9, 1936, 34.4 feet.

(B-2-1)26aa3. Ivan Layton, Woods Cross, Davis County. Diameter 2 inches, depth 100 feet. Measuring point, top of tee on casing, 2.0 feet above land surface. Pressure head: Apr. 9, 1936, 26.25 feet (found flowing).

(B-2-1)26aa4. Dale Winegar, Woods Cross, Davis County. Diameter 3 inches, depth 160 feet. Measuring point, top of tee on casing, 2.0 feet above land surface. Pressure head: Apr. 9, 1936, 29.65 feet.

(B-2-1)26aa5. Rachel Ure, Woods Cross, Davis County. Diameter 3 inches, depth 265 feet. Measuring point, top of ell on casing, 1.5 feet above surface and 4,241.83 feet above sea level. Pressure head: Apr. 6, 1936, 23.55 feet.

(B-2-1)26aa8. Leonard Winegar, Woods Cross, Davis County. Diameter 1 1/4 inches, depth 100 feet. Measuring point, top of coupling, 2.0 feet above land surface and 4,244.55 feet above sea level. Pressure head: Apr. 6, 1936, 18.7 feet.

(B-2-1)26aa9. Alvin Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 250 feet. Measuring point, top of ell on casing, 2.0 feet above land surface and 4,243.99 feet above sea level. Pressure head: Apr. 6, 1936, 40.1 feet (found flowing; leaking around casing during test).

(B-2-1)26aa10. Clyde Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.5 feet above land surface and 4,246.72 feet above sea level. Pressure head: Mar. 30, 1936, 29.4 feet (found flowing).

(B-2-1)26aa11. Clyde Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, at land surface and 4,245.04 feet above sea level. Pressure head: Mar. 28, 1936, 22.0 feet (found flowing).

(B-2-1)26aa12. Clyde Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, at land surface and 4,244.82 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 28, 1935	+23.15	Apr. 23, 1936	+32.40	May 4, 1936	+30.55
Dec. 5	+31.2	29	+30.05	5	+30.75
Mar. 2, 1936	+32.25	May 1	+31.55	6	+30.75
23	+30.35	2	+31.9		

Observations discontinued; well has started to leak around casing.

(B-2-1)26aa13. Clyde Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 267 feet. Measuring point, top of bushing under faucet, 1.4 feet above land surface and 4,245.12 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 28, 1935	+39.5	Mar. 23, 1936	+40.8	May 1, 1936	+42.1
Dec. 5	+40.2	Apr. 23	+41.6	2	+42.5
Mar. 2, 1936	+40.15	29	+41.9	4	+42.65

(B-2-1)26aal3.--Clyde Hatch.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 5, 1936	+42.9	May 13, 1936	+42.45	June 25, 1936	+43.9
6	+42.85	14	+42.5	July 11	+45.1
7	+42.95	15	+42.3	Aug. 12	+42.6
9	+42.55	18	+42.05	Oct. 5	+44.6
11	+42.95	21	+42.15	Dec. 21	+46.9
12	+42.7	27	+42.6		

(B-2-1)26ab2. Irene Reed, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of ell on casing, 1.0 foot above land surface. Pressure head: Apr. 6, 1936, 29.0 feet (found flowing).

(B-2-1)26ad1. John E. Hatch, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of tee on casing, 1.8 feet above land surface and 4,245.92 feet above sea level. Pressure head: Mar. 28, 1936, 22.55 feet.

(B-2-1)26ad2. Henry C. Tovey, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of ell on casing, 3.0 feet above land surface and 4,260.04 feet above sea level. Pressure head: Mar. 27, 1936, 11.0 feet (found flowing).

(B-2-1)26ad3. J. H. Parkin, Woods Cross, Davis County. Diameter 3 inches, depth 208 feet. Measuring point, top of tee on casing, 2.0 feet above land surface. Pressure head: Mar. 27, 1936, 36.2 feet.

(B-2-1)26ad4. J. H. Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 110 feet. Measuring point, top of valve opening, 1.0 foot above land surface and 4,250.52 feet above sea level. Pressure head: Mar. 18, 1936, 17.6 feet (leaking during test); Mar. 28, 1936, 18.3 feet.

(B-2-1)26ad5. J. H. Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 110 feet. Measuring point, top of ell on casing, 1.2 feet above land surface. Pressure head: Mar. 18, 1936, 17.6 feet.

(B-2-1)26ad6. J. H. Parkin, Woods Cross, Davis County. Diameter 3 inches, depth 248 feet. Measuring point, top of ell on casing, at land surface. Pressure head: Mar. 28, 1936, 37.2 feet.

(B-2-1)26ad7. J. E. Winegar, Woods Cross, Davis County. Diameter 2½ inches, depth 163 feet. Measuring point, top of tee on casing, 1.1 feet above land surface and 4,258.52 feet above sea level. Pressure head: Mar. 28, 1936, 26.95 feet.

(B-2-1)26ba1. Ancil Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 90 feet. Measuring point, top of ell on casing, 1.3 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 13, 1936	+11.9	May 5, 1936	+11.7	May 13, 1936	+11.6
23	+11.9	6	+11.6	14	+11.6
Apr. 24	+12.2	7	+11.7	18	+11.45
29	+11.9	9	+11.55	21	+11.3
May 1	+11.75	11	+11.6	27	+11.3
2	+12.00	12	+11.65	Oct. 5	+10.3
4	+11.65				

(B-2-1)26ba2. Ancil Hatch, Woods Cross, Davis County. Diameter 4 inches, depth 385 feet. Measuring point, top of casing, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 9, 1936	+39.3	May 2, 1936	a/+27.3	May 6, 1936	a/+27.05
24	a/+29.0	4	a/+27.3	7	a/+27.2
May 1	a/+27.7	5	a/+27.8	9	a/+26.6

a/ Found flowing.

(B-2-1)26ba2. Ancil Hatch.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 11, 1936	a/+26.4	May 14, 1936	a/+25.8	May 21, 1936	a/+25.4
12	a/+26.25	18	a/+25.7	27	a/+25.5
13	a/+26.1				

(B-2-1)26ba3. Ancil Hatch, Woods Cross, Davis County. Diameter 4 inches, depth 375 feet. Measuring point, top of casing, at land surface. Pressure head: Apr. 24, 1936, 39.35 feet (found flowing).

(B-2-1)26bd4. Perry Burnham, Woods Cross, Davis County. Diameter 4 inches, depth 316 feet. Measuring point, top of ell on casing, 2.0 feet above land surface. Pressure head: Apr. 7, 1936, 42.6 feet.

(B-2-1)26ca2. Nellie Page, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of ell on casing, 0.5 foot above land surface and 4,237.62 feet above sea level. Pressure head: Apr. 9, 1936, 17.7 feet (found flowing).

(B-2-1)26cb1. Ruth Brown, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, at land surface. Pressure head: Apr. 9, 1936, 4.85 feet (found flowing).

(B-2-1)26cd3. Utah Hunting Club, Woods Cross, Davis County. Diameter 4 inches, depth 290 feet. Measuring point, top of ell on casing, 1.4 feet above land surface and 4,242.72 feet above sea level. Pressure head: May 5, 1936, 30.9 feet (found flowing).

(B-2-1)26cd4. Rolland Cahoon, Woods Cross, Davis County. Diameter 2 inches, depth 130 feet. Measuring point, top of globe valve, 1.3 feet above land surface and 4,243.31 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 18, 1936	+36.8	May 5, 1936	+36.3	May 15, 1936	a/+25.95
23	+37.05	6	+32.05	15	a/+28.6
Apr. 24	+32.2	7	+32.0	16	a/+25.8
29	+31.7	9	+31.6	18	a/+24.8
30	+31.65	11	+30.7	21	a/+24.65
May 1	+31.55	12	+29.9	27	a/+23.8
2	+35.3	13	+29.6	Oct. 5	a/+26.5
4	+36.1	14	+30.05		

(B-2-1)26cd5. Rolland Cahoon, Woods Cross, Davis County. Diameter 3 inches, depth 268 feet. Measuring point, top of valve on casing, 3.3 feet above land surface and 4,245.98 feet above sea level. Pressure head: May 14, 1936, 27.0 feet (found flowing; leaking during test).

(B-2-1)26cd6. Rolland Cahoon, Woods Cross, Davis County. Diameter 3 inches, depth 290 feet. Measuring point, top of flange of valve, 2.0 feet above land surface. Pressure head: Mar. 26, 1936, 33.6 feet (leaking around casing during test).

(B-2-1)26dal. L. G. Atkinson, Woods Cross, Davis County. Diameter 3 inches, depth 188 feet. Measuring point, top of tee on casing, 1.3 feet above land surface and 4,266.09 feet above sea level. Well flowing to corral prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 13, 1936	+18.25	May 5, 1936	+20.4	May 14, 1936	+19.65
23	+18.6	6	+19.95	15	+19.55
Apr. 23	+18.9	7	+19.95	18	+18.8
29	+18.6	9	+19.85	21	+18.9
May 1	+19.2	11	+19.85	27	+19.4
2	+19.5	12	+19.65	Oct. 5	+21.75
4	+20.05	13	+19.5		

a/ Found flowing.

(B-2-1)26da2. W. H. Argyle, Woods Cross, Davis County. Diameter 2 inches, depth 130 feet. Measuring point, top of ell on casing, 1.0 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 13, 1936	+18.5	May 5, 1936	+20.2	May 14, 1936	+19.55
23	+18.6	6	+20.0	15	+19.6
Apr. 23	+19.4	7	+20.1	18	+19.15
29	+19.3	9	+20.1	21	+19.3
May 1	+19.5	11	+20.1	27	+19.45
2	+19.7	12	+19.55	Oct. 5	+21.75
4	+19.95	13	+19.35		

(B-2-1)26da4. W. H. Argyle, Woods Cross, Davis County. Diameter 2 inches, depth 160 feet. Measuring point, top of ell on casing, 1.2 feet above land surface and 4,266.19 feet above sea level. Pressure head: Mar. 27, 1936, 18.0 feet (found flowing).

(B-2-1)26da5. Olive Muir, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 65 feet. Measuring point, top of ell on casing, 1.3 feet above land surface and 4,266.34 feet above sea level. Pressure head: Mar. 27, 1936, 5.7 feet (found flowing).

(B-2-1)26da6. J. I. Atkinson, Woods Cross, Davis County. Diameter 2 inches, depth 154 feet. Measuring point, top of tee on casing, 1.9 feet above land surface and 4,264.98 feet above sea level. Pressure head: Mar. 27, 1936, 16.6 feet (found flowing).

(B-2-1)26da7. A. E. Lawrence, Woods Cross, Davis County. Diameter 2 inches, depth 160 feet. Measuring point, top of ell on casing, 1.2 feet above land surface and 4,268.18 feet above sea level. Pressure-recording gage operated on this well Apr. 25 to July 11, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 16, 1936	+14.9	May 14, 1936	+12.9	June 22, 1936	+13.3
23	+15.2	18	+11.3	24	+12.0
Apr. 23	+14.0	19	+11.8	28	+11.6
26	+14.1	23	+11.1	30	+12.4
30	+13.0	25	+11.7	July 11	+12.6
May 2	+15.3	31	+10.4	Aug. 12	a/+11.9
5	+16.2	June 9	+11.3	Oct. 5	+13.05
6	+13.7	June 13	+12.9	Dec. 21	+19.8
12	+12.6				

(B-2-1)26da8. A. E. Lawrence, Woods Cross, Davis County. Diameter $2\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of tee on casing, 2.0 feet above land surface and 4,268.06 feet above sea level. Pressure head: Mar. 27, 1936, 12.9 feet.

(B-2-1)26da9. Arnold Hauserman, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of cross on casing, 4.0 feet above land surface. Pressure head: Mar. 18, 1936, 7.0 feet (found flowing).

(B-2-1)26dc3. Thalman, Nelson, et al, Woods Cross, Davis County. Diameter 4 inches, depth 178 feet. Measuring point, top of ell on casing, 2.2 feet above land surface and 4,248.93 feet above sea level. Pressure head: Mar. 26, 1936, 28.4 feet (leaking around casing during test).

(B-2-1)26dc6. Clinton Mills, Woods Cross, Davis County. Diameter 3 inches, depth 300 feet. Measuring point, top of ell on casing, 0.8 foot above land surface and 4,249.38 feet above sea level. Pressure head: Mar. 26, 1936, 32.1 feet.

(B-2-1)26ddl. Heber Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 102 feet. Measuring point, top of tee on casing, 1.0 foot above land surface and 4,274.02 feet above sea level. Pressure head: Mar. 27, 1936, 7.5 feet.

(B-2-1)26dd2. J. I. Atkinson, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of casing, 0.3 foot above land surface. Pressure head: Mar. 27, 1936, 11.0 feet.

(B-2-1)26dd5. Winnie Whitecar, Woods Cross, Davis County. Diameter 3 inches, depth 300 feet. Measuring point, top of tee on casing, 0.5 foot above land surface and 4,268.22 feet above sea level. Pressure head: Mar. 27, 1936, 15.05 feet.

(B-2-1)26dd6. J. I. Atkinson, Woods Cross, Davis County. Diameter 2 inches, depth 110 feet. Measuring point, top of tee on casing, 2.6 feet above land surface and 4,267.38 feet above sea level. Pressure head: Mar. 27, 1936, 10.7 feet (found flowing).

(B-2-1)26dd7. J. I. Atkinson, Woods Cross, Davis County. Diameter 3 inches, depth 174 feet. Measuring point, top of ell on casing, 1.6 feet above land surface and 4,249.28 feet above sea level. Pressure head: Mar. 27, 1936, 31.3 feet (leaking during test).

(B-2-1)26dd8. Clinton Mills, Woods Cross, Davis County. Diameter 3 inches, depth 208 feet. Measuring point, top of ell on casing, 2.0 feet above land surface and 4,270.42 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 1, 1936	+ 9.2	May 9, 1936	+ 7.75	May 15, 1936	+ 7.1
2	+10.9	11	+ 7.55	16	+ 6.8
4	+11.15	12	+ 6.8	18	+ 6.5
5	+11.9	13	+ 6.7	21	+ 6.55
6	+ 7.9	14	+ 7.3	27	+ 5.75
7	+ 7.85				

(B-2-1)26dd10. Clinton Mills, Woods Cross, Davis County. Diameter 2 inches, depth 115 feet. Measuring point, top of ell on casing, 1.3 feet above land surface and 4,270.94 feet above sea level. Pressure head: Mar. 26, 1936, 10.2 feet (found flowing).

(B-2-1)26dd11. Heber Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 98 feet. Measuring point, top of tee on casing, 1.8 feet above land surface and 4,272.08 feet above sea level. Pressure head: Mar. 26, 1936, 9.1 feet.

(B-2-1)26dd12. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches, depth 180 feet. Measuring point, top of concrete curb, 3.5 feet above land surface. Pressure head: May 11, 1936, 9.65 feet.

(B-2-1)26dd13. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches, depth 261 feet. Measuring point, top of concrete curb, 3.5 feet above land surface. Pressure head: May 11, 1936, 6.0 feet.

(B-2-1)26dd14. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches, depth 361 feet. Measuring point, top of concrete curb, 3.5 feet above land surface. Pressure head: May 11, 1936, 6.7 feet (found flowing).

(B-2-1)26dd15. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches, depth 248 feet. Measuring point, top of concrete curb, 3.5 feet above land surface. Pressure head: May 11, 1936, 7.15 feet (found flowing).

(B-2-1)27a1. Ethel Palmer, Woods Cross, Davis County. Diameter 2 inches, depth 200 feet. Measuring point, top of casing, 0.7 foot above land surface and 4,222.42 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 17, 1936	+19.6	May 1, 1936	a/+10.7	May 6, 1936	a/+10.1
23	+19.5	2	a/+10.55	7	a/+ 9.9
Apr. 24	+19.65	4	a/+10.35	9	a/+ 9.7
29	a/+11.2	5	a/+10.25	11	a/+ 8.9

a/ Found flowing.

(B-2-1)27aal. Ethel Palmer.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 12, 1936	a/+ 8.6	May 18, 1936	a/+ 8.2	Oct. 5, 1936	a/+ 7.75
13	a/+ 8.55	21	a/+ 8.05	Dec. 21	+20.6
14	a/+ 8.45	27	s/+ 7.8		

(B-2-1)27aa2. Ethel Palmer, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 0.3 foot above land surface and 4,223.26 feet above sea level. Pressure head: Mar. 30, 1936, 26.2 feet (found flowing).

(B-2-1)27aa3. Ethel Palmer, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 0.9 foot above land surface and 4,224.11 feet above sea level. Pressure head: Mar. 30, 1936, 26.0 feet.

(B-2-1)27ab1. C. A. Carlquist, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 0.5 foot above land surface and 4,221.91 feet above sea level. Pressure head: Mar. 30, 1936, 7.3 feet.

(B-2-1)27ac2. C. A. Carlquist, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of casing, at land surface and 4,222.32 feet above sea level. Pressure head: Mar. 30, 1936, 45.9 feet.

(B-2-1)27dal. H. K. Miles, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of casing, 1.0 foot above land surface and 4,226.85 feet above sea level. Pressure head: Mar. 30, 1936, 21.8 feet (leaks around casing when well is closed).

(B-2-1)27dcl. Albert Thalman, Woods Cross, Davis County. Diameter 2 inches, depth 325 feet. Measuring point, top of casing, 0.5 foot above land surface and 4,223.35 feet above sea level. Pressure head: Mar. 30, 1936, 7.7 feet.

(B-2-1)27ddl. Albert Thalman, Woods Cross, Davis County. Diameter 2 inches, depth 325 feet. Measuring point, top of casing, 0.5 foot above land surface. Pressure head: Mar. 30, 1936, 18.15 feet.

(B-2-1)27dd2. Albert Thalman, Woods Cross, Davis County. Diameter 3 inches, depth 500 feet. Measuring point, top of tee on casing, 1.3 feet above land surface and 4,231.00 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 13, 1936	b/+31.9	May 6, 1936	b/+25.25	May 18, 1936	c/+23.65
23	b/+32.4	7	b/+25.95	21	b/+25.6
Apr. 24	b/+31.6	9	b/+25.9	27	b/+25.1
29	b/+26.85	11	b/+25.75	June 25	b/+23.9
May 1	b/+26.6	12	b/+25.15	Aug. 12	c/+23.2
2	b/+26.5	13	c/+24.55	Oct. 5	b/+23.4
4	b/+26.6	14	b/+24.65	Dec. 21	b/+33.9
5	b/+26.65	15	b/+24.55		

(B-2-1)28ab2. Utah Hunting Club, Woods Cross, Davis County. Diameter 2 inches, depth 157 feet. Measuring point, top of tee on casing, 0.8 foot above land surface. Pressure head: Apr. 9, 1936, 7.8 feet (found flowing).

(B-2-1)34aa3. Swen Jenson, Woods Cross, Davis County. Diameter 3 inches, depth 300 feet. Measuring point, top of ell on casing, 2.0 feet above land surface and 4,234.87 feet above sea level. Pressure head: Mar. 20, 1936, 26.4 feet.

a/ Found flowing.

b/ Found flowing into trough.

c/ Found flowing free.

(B-2-1)34ad2. M. H. Dearden, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of ell on casing, 3.7 feet above land surface and 4,235.39 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 13, 1936	+15.45	May 5, 1936	+13.55	May 14, 1936	+12.5
23	+15.95	6	+13.25	15	+12.3
Apr. 24	+15.2	7	+13.15	18	a/+11.75
29	+13.5	9	+13.05	21	+11.9
May 1	+13.3	11	+12.9	27	+11.8
2	+13.4	12	+12.75	Oct. 5	+12.15
4	+13.55	13	+12.55	Dec. 21	+20.5

(B-2-1)34ad5. M. H. Dearden, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 0.8 foot above land surface and 4,232.65 feet above sea level. Pressure head: Mar. 13, 1936, 14.15 feet (found flowing).

(B-2-1)34dal. D. M. Hunter, Woods Cross, Davis County. Diameter 3 inches, depth 530 feet. Measuring point, top of tee on casing, 2.0 feet above land surface and 4,233.21 feet above sea level. Pressure head: Mar. 20, 1936, 27.6 feet (found flowing).

(B-2-1)34da2. D. M. Hunter, Woods Cross, Davis County. Diameter 2½ inches. Measuring point, top of ell on casing, 2.8 feet above land surface and 4,233.55 feet above sea level. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 16, 1936	+7.7	May 5, 1936	+6.2	May 14, 1936	+5.95
23	+7.8	6	+6.2	15	+5.85
Apr. 23	+8.05	7	+6.15	18	+5.75
29	+7.85	9	+6.05	21	+5.7
May 1	+6.75	11	+6.05	27	+5.5
2	+6.5	12	+6.1	Oct. 5	+5.55
4	+6.35	13	+5.95	Dec. 21	+7.95

(B-2-1)34da3. D. M. Hunter, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 0.5 foot above land surface. Pressure head: Apr. 24, 1936, 15.65 feet (found flowing).

(B-2-1)34ddl. E. D. Reese, Woods Cross, Davis County. Diameter 2 inches, depth 250 feet. Measuring point, top of concrete basin, 1.3 feet above land surface and 4,227.73 feet above sea level. Pressure head: Mar. 19, 1936, 7.4 feet (found flowing).

(B-2-1)35aal. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches. Measuring point, top of tee on casing, 1.4 feet above land surface and 4,270.36 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 26, 1936	a/+11.7	May 12, 1936	+ 9.3	May 13, 1936	+11.4
May 11	a/+12.7	13	+ 8.6	14	a/+12.5
11	+ 9.05				

(B-2-1)35aa2. Thelma King, Woods Cross, Davis County. Diameter 2 inches, depth 160 feet. Measuring point, top of tee on casing, 1.7 feet above land surface and 4,271.40 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 18, 1936	+10.2	Apr. 29, 1936	+10.2	May 4, 1936	+10.85
23	+10.25	May 1	+10.1	5	+11.15
Apr. 23	+10.1	2	+ 9.95	6	+11.25

a/ Found flowing.

(B-2-1)35aa2. Thelma King.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 7, 1936	+11.0	May 13, 1936	+ 9.1	May 18, 1936	+ 9.9
9	+10.95	14	+10.8	21	+ 9.85
11	+10.0	15	+10.75	27	+ 9.5
12	+ 8.7	16	+10.65	Oct. 5	+12.6

(B-2-1)35aa3. Thelma King, Woods Cross, Davis County. Diameter $1\frac{1}{2}$ inches, depth 100 feet. Measuring point, top of concrete trough, 1.5 feet above land surface. Pressure head: Mar. 23, 1936, 6.85 feet (found flowing).

(B-2-1)35aa4. Irvin Moss, Woods Cross, Davis County. Diameter 3 inches, depth 180 feet. Measuring point, top of ell on casing, 1.5 feet above land surface and 4,266.90 feet above sea level. Pressure head: Mar. 23, 1936, 14.85 feet.

(B-2-1)35aa6. L. G. Atkinson, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of outlet pipe, 0.6 foot above land surface. Pressure head: Mar. 25, 1936, 10.9 feet.

(B-2-1)35aa7. L. G. Atkinson, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of outlet pipe, at land surface. Pressure head: Mar. 25, 1936, 11.6 feet (leaking during test).

(B-2-1)35aa8. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, at land surface and 4,268.7 feet above sea level. Pressure head: Mar. 26, 1936, 12.7 feet.

(B-2-1)35aa9. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 3 inches, depth 250 feet. Measuring point, top of cross on casing, 0.7 foot above land surface. Pressure head: Mar. 26, 1936, 13.55 feet (found flowing).

(B-2-1)35ab1. Rolland Cahoon, Woods Cross, Davis County. Diameter 3 inches, depth 230 feet. Measuring point, top of flange at valve, 1.3 feet above land surface and 4,247.6 feet above sea level. Pressure head: Mar. 26, 1936, 33.8 feet.

(B-2-1)35ab2. Rolland Cahoon, Woods Cross, Davis County. Diameter 3 inches, depth 160 feet. Measuring point, top of coupling on casing, 1.3 feet above land surface and 4,247.56 feet above sea level. Pressure head: Mar. 26, 1936, 10.9 feet (found flowing).

(B-2-1)35ab4. Rolland Cahoon, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, at land surface. Pressure head: May 21, 1936, 13.25 feet (found flowing).

(B-2-1)35ac1. Stephen Moss, Woods Cross, Davis County. Diameter 2 inches, depth 220 feet. Measuring point, top of casing, 1.5 feet above land surface and 4,248.22 feet above sea level. Pressure head: Mar. 19, 1936, 9.6 feet (found flowing).

(B-2-1)35ad2. Anna Lemon, Woods Cross, Davis County. Diameter 2 inches, depth 225 feet. Measuring point, top of brick curb, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 24, 1935	a/+ 7.0	May 5, 1936	+10.15	May 15, 1936	+ 9.85
Mar. 16, 1936	+ 8.75	6	+ 9.9	16	+ 9.75
23	+ 8.9	7	+10.05	18	+ 9.75
Apr. 23	b/+ 9.15	9	+10.25	21	+ 9.8
29	+ 9.35	11	+10.1	27	+ 9.45
May 1	+ 9.3	12	+ 9.75	Sept. 3	a/+11.69
2	+ 9.6	13	+ 9.55	15	a/+12.23
4	b/+ 9.4	14	+ 9.95	30	a/+12.20

a/ Measurement by W. S. Lemon.

b/ Found flowing.

(B-2-1)35ad2. Anna Lemon.--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 10, 1936	a/+12.79	Nov. 10, 1936	a/+13.80	Dec. 10, 1936	a/+14.66
20	a/+12.95	20	a/+14.33	20	a/+14.66
31	a/+13.35	30	a/+14.50	29	a/+15.18

(B-2-1)35ad4. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches, depth 222 feet. Measuring point, top of cross on casing, 1.0 foot above land surface. Altitude, 4,268.29 feet. Recording gage operated on this well throughout period of record.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 4, 1936	+8.95	Apr. 17, 1936	+10.4	June 28, 1936	+10.2
15	+9.1	24	+ 9.3	July 1	+10.6
31	+8.9	30	+ 9.2	4	+10.5
Feb. 10	+8.7	May 5	+10.2	7	+ 9.8
20	+9.1	12	+ 9.5	15	+11.4
29	+9.1	21	+ 9.3	30	+11.15
Mar. 15	+9.4	23	+ 8.5	Aug. 6	+10.2
31	+9.7	June 5	+ 9.0	14	+10.8
Apr. 8	+9.8	15	+10.8	26	+11.05

(B-2-1)35ad6. D. E. & A. R. Howard, Woods Cross, Davis County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.7 foot above land surface and 4,265.95 feet above sea level. Pressure head: Mar. 26, 1936, 11.3 feet (found flowing).

(B-2-1)35ad9. Stephen Moss, Woods Cross, Davis County. Diameter 3 inches, depth 237 feet. Measuring point, top of tee on casing, 0.5 foot above land surface and 4,268.19 feet above sea level. Pressure head: Mar. 25, 1936, 13.3 feet.

(B-2-1)35ad10. Stephen Moss, Woods Cross, Davis County. Diameter 3 inches, depth 260 feet. Measuring point, top of tee on casing, 0.9 foot above land surface and 4,267.55 feet above sea level. Pressure head: Mar. 25, 1936, 13.9 feet.

(B-2-1)35ad11. Stephen Moss, Woods Cross, Davis County. Diameter 3 inches, depth 240 feet. Measuring point, top of tee on casing, 0.7 foot above land surface and 4,268.19 feet above sea level. Pressure head: Mar. 25, 1936, 13.3 feet (found flowing).

(B-2-1)35bb1. Rolland Cahoon, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 1.5 feet above land surface and 4,235.50 feet above sea level. Pressure head: Mar. 30, 1936, 11.55 feet (found flowing).

(B-2-1)35cal. Wm. Moss estate, Woods Cross, Davis County. Diameter 3 inches. Measuring point, top of ell on casing, 0.9 foot above land surface and 4,239.50 feet above sea level. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 18, 1936	+34.7	May 5, 1936	+32.45	May 14, 1936	+31.9
23	+34.15	6	+32.25	15	+31.9
Apr. 23	+34.1	7	+32.3	18	+31.65
29	+32.3	9	+32.35	21	+31.45
May 1	+32.1	11	+32.25	27	+30.7
2	+32.2	12	+32.0	Oct. 5	+33.0
4	+32.25	13	+31.9	Dec. 21	+37.45

a/ Measurement by W. S. Lemon.

(B-2-1)35cb1. Clinton Mills, Woods Cross, Davis County. Diameter 3 inches, depth 305 feet. Measuring point, top of ell on casing, 0.4 foot above land surface and 4,234.85 feet above sea level. Pressure head: Mar. 20, 1936, 16.6 feet (found flowing).

(B-2-1)35da2. Stephen Moss, Woods Cross, Davis County. Diameter 2 inches, depth 225 feet. Measuring point, top of tee on casing, 1.2 feet above land surface and 4,273.45 feet above sea level. Pressure head: Mar. 25, 1936, 5.9 feet (found flowing).

(B-2-1)35da3. T. B. Child, Woods Cross, Davis County. Diameter 3 inches, depth 236 feet. Measuring point, top of casing, 0.4 foot above land surface and 4,267.28 feet above sea level. Pressure head: Mar. 19, 1936, 8.75 feet.

(B-2-1)35da4. T. B. Child, Woods Cross, Davis County. Diameter 2½ inches, depth 100 feet. Measuring point, top of ell on casing, 1.5 feet above land surface and 4,262.35 feet above sea level. Pressure head: Mar. 19, 1936, 7.85 feet (found flowing).

(B-2-1)35da5. G. Q. Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 210 feet. Measuring point, top of tee on casing, 0.5 foot above land surface and 4,269.82 feet above sea level. Pressure head: Mar. 19, 1936, 7.8 feet.

(B-2-1)35da6. D. E. Howard, Woods Cross, Davis County. Diameter 1½ inches, depth 100 feet. Measuring point, top of casing, 0.4 foot above land surface. Pressure head: Mar. 19, 1936, 0.25 foot (casing probably partly plugged).

(B-2-1)35da8. Farmers State Bank, Woods Cross, Davis County. Diameter 2 inches, depth 202 feet. Measuring point, top of ell on casing, 1.9 feet above land surface and 4,277.80 feet above sea level. Pressure head: Mar. 19, 1936, 2.78 feet.

(B-2-1)35da10. D. E. Howard, Woods Cross, Davis County. Diameter 2 inches, depth 200 feet. Measuring point, top of tee on casing, 1.2 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 16, 1936	+7.95	May 6, 1936	+8.1	May 15, 1936	+7.0
23	+8.1	7	+8.25	16	+6.65
Apr. 23	+7.65	9	+8.2	18	+6.6
29	+7.75	11	+7.9	21	+6.55
May 1	+7.3	12	+7.1	27	+6.45
2	+7.8	13	+6.9	Oct. 5	+8.85
4	+8.15	14	+7.25	Dec. 21	+13.4
5	+8.4				

(B-2-1)35db1. Joseph Moss, Woods Cross, Davis County. Diameter 3 inches, depth 230 feet. Measuring point, top of ell on casing, 1.0 foot above land surface and 4,242.51 feet above sea level. Pressure head: Mar. 19, 1936, 31.65 feet.

(B-2-1)35db2. G. Q. Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 84 feet. Measuring point, top of ell on casing, 1.5 feet above land surface and 4,245.55 feet above sea level. Pressure head: Mar. 16, 1936, 6.2 feet (leaking around casing during test).

(B-2-1)35db3. T. B. Child, Woods Cross, Davis County. Diameter 2 inches, depth 180 feet. Measuring point, top of west arm of cross, 1.0 foot above land surface. Pressure head: Mar. 19, 1936, 13.8 feet (found flowing).

(B-2-1)35dd1. J. M. Alston, Woods Cross, Davis County. Diameter 1½ inches. Measuring point, top of casing, 0.3 foot below land surface. Pressure head: Mar. 19, 1936, 3.78 feet (found flowing).

(B-2-1)35dd3. Anna Hatch, Woods Cross, Davis County. Diameter 2 inches, depth 200 feet. Measuring point, top of reducer on casing, 1.0 foot above land surface. Pressure head: Mar. 19, 1936, 2.55 feet.

(B-2-1)35dd5. Salt Lake Union Stockyards, Woods Cross, Davis County. Diameter 4 inches, depth 350 feet. Measuring point, top of outlet pipe, at land surface. Pressure head: Mar. 19, 1936, 5.35 feet (found flowing).

(B-2-1)35dd7. J. H. Howard, Woods Cross, Davis County. Diameter 3 inches, depth 180 feet. Measuring point, top of coupling on casing, 1.0 foot above land surface. Pressure head: Mar. 19, 1936, 3.95 feet.

(B-2-1)35dd8. J. H. Howard, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 60 feet. Measuring point, top of tee on casing, 0.8 foot above land surface and 4,276.23 feet above sea level. Depth to water: Mar. 16, 1936, 0.11 foot.

(B-2-1)36ba1. Edith Hatch, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 160 feet. Measuring point, top of ell on casing, 1.0 foot above land surface and 4,297.78 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 18, 1936	-8.20	May 5, 1936	-7.34	May 14, 1936	-7.07
23	-8.58	6	-6.95	15	-7.15
Apr. 23	-9.09	7	-7.02	18	-6.89
29	-9.10	9	-7.47	21	-6.99
May 1	-9.16	11	-7.35	27	-7.08
2	-9.18	12	-7.28	Oct. 5	-8.95
4	-7.83	13	-7.07		

(B-2-1)36ba3. Hyrum Parkin, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 70 feet. Measuring point, top of casing, 0.7 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 16, 1936	-3.02	Apr. 23, 1936	-2.07	May 1, 1936	+ (?)
23	-2.99	29	-1.97		

(B-2-1)36ba5. Millesant Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 85 feet. Measuring point, top of reducer on casing, 1.1 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 16 1936	-24.08	May 7, 1936	-21.56	May 27, 1936	-20.51
23	-23.89	9	-21.39	June 25	-18.50
28	-23.70	11	-21.30	July 11	-17.95
Apr. 23	-22.93	12	-21.40	22	-17.58
29	-22.53	13	-21.39	Aug. 12	-18.22
May 1	-22.45	14	-21.16	Oct. 5	-17.66
2	-22.27	15	-21.10	Nov. 10	-17.53
4	-21.94	16	-21.14	Dec. 15	-17.00
5	-21.65	18	-21.05	21	-17.08
6	-21.68	21	-20.83		

(B-2-1)36bb1. E. T. Hatch, Woods Cross, Davis County. Diameter 3 inches, depth 148 feet. Measuring point, top of casing, 1.8 feet above land surface. Pressure head: Mar. 18, 1936, 2.43 feet.

(B-2-1)36bb2. Hyrum Parkin, Woods Cross, Davis County. Diameter 3 inches, depth 136 feet. Measuring point, top of ell on casing, 2.2 feet above land surface and 4,283.63 feet above sea level. Pressure head: Mar. 18, 1936, 1.41 feet (leaking during test).

(B-2-1)36bb3. Anna Lemon, Woods Cross, Davis County. Diameter 3 inches, depth 167 feet. Measuring point, top of coupling on casing, 1.3 feet above land surface and 4,283.14 feet above sea level. Measurements prior to March 1936 by W. S. Lemon. Recording gage operated on this well since April 29, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 22, 1931	-1.0	Apr. 23, 1936	+2.43	Sept. 12, 1936	+6.55
Mar. 3, 1934	-0.0	May 1	+2.68	14	+6.2
May 9	-2.1	5	+3.68	17	+6.6
June 2	-3.45	6	+3.48	25	+6.7
July 26	-5.35	9	+3.70	27	+6.25
Sept. 2	-6.25	12	+3.24	Oct. 3	+6.95
30	-6.25	14	+3.54	8	+6.65
Nov. 1	-5.6	21	+3.70	15	+6.25
Dec. 15	-4.35	30	+3.33	23	+6.85
Jan. 5, 1935	-3.65	June 15	+5.54	30	+7.2
21	-3.6	25	+5.30	Nov. 5	+7.4
Feb. 7	-3.4	30	+5.62	6	+7.1
Mar. 28	-2.85	July 7	+5.26	9	+7.0
May 26	-2.9	13	+6.21	11	+7.5
June 24	- .35	21	+6.45	16	+7.5
July 19	- .85	30	+6.09	21	+8.05
Aug. 17	-1.0	Aug. 9	+5.50	Dec. 21	+7.55
Oct. 16	- .5	25	+6.43	25	+8.35
Mar. 16, 1936	+1.65	31	+6.0	28	+7.85
23	+1.65	Sept. 9	+6.4	31	+8.1

(B-2-1)36bc1. Anna Lemon, Woods Cross, Davis County. Diameter 2 inches, depth 235 feet. Measuring point, top of casing, 0.5 foot above land surface and 4,282.75 feet above sea level. Measurements prior to March 1936 by W. S. Lemon.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 22, 1931	-3.0	Nov. 1, 1934	-6.6	June 24, 1935	-2.1
Mar. 3, 1934	- .35	Dec. 15	-5.0	July 19	-2.35
May 9	-3.75	Jan. 5, 1935	-4.5	Aug. 17	-2.9
June 2	-5.0	21	-4.4	Oct. 16	-4.8
July 26	-6.6	Feb. 7	-4.1	Mar. 16, 1936	+ .97
Sept. 2	-7.5	Mar. 28	-3.7		
30	-7.4	May 26	-4.0		

(B-2-1)36bc2. J. W. Cleverly, Woods Cross, Davis County. Diameter 2 inches, depth 220 feet. Measuring point, top of ell on casing, 2.0 feet above land surface and 4,283.35 feet above sea level. Pressure head: Mar. 18, 1936, 1.05 feet (found flowing).

(B-2-1)36bc3. Wm. Moss estate, Woods Cross, Davis County. Diameter 4 inches, depth 200 feet. Measuring point, top of ell on casing, 0.5 foot above land surface and 4,279.62 feet above sea level. Pressure head: Apr. 7, 1936, 2.58 feet (found flowing).

(B-2-1)36bd1. Phoebe Parkin, Woods Cross, Davis County. Diameter 2 inches, depth 74 feet. Measuring point, top of reducer on casing, 0.8 foot above land surface and 4,309.71 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 18, 1936	-28.12	May 5, 1936	-25.85	May 15, 1936	-25.36
23	-28.00	6	-25.90	16	-25.40
Apr. 7	-27.61	7	-25.79	18	-25.33
23	-27.07	9	-25.62	21	-25.13
29	-26.70	11	-25.52	27	-24.82
May 1	-26.63	12	-25.63	Oct. 5	-21.88
2	-26.45	13	-25.63		
4	-26.15	14	-25.42		

(B-2-1)36bd3. W. A. Brown, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 85 feet. Measuring point, top of coupling on casing, 0.4 foot above land surface. Depth to water: Mar. 18, 1936, 23.83 feet.

(B-2-1)36bd7. William Parkin, Woods Cross, Davis County. Diameter 2 inches. Measuring point, top of casing, 22.1 feet below land surface. Depth to water: Apr. 7, 1936, 10.78 feet.

(B-2-1)36bd8. Mrs. W. E. Page, Woods Cross, Davis County. Diameter 48 inches, depth 30 feet. Measuring point, top of plank cover, at land surface. Depth to water: Apr. 7, 1936, 25.82 feet.

(B-2-1)36cal. Wm. Moss estate, Woods Cross, Davis County. Diameter 2 inches, depth 85 feet. Measuring point, top of casing, 0.4 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 16, 1936	-14.31	May 5, 1936	-12.12	May 14, 1936	-12.05
23	-14.15	6	-12.26	15	-12.05
Apr. 23	-13.32	7	-12.11	18	-12.18
29	-12.96	9	-11.84	21	-12.08
May 1	-12.97	11	-11.89	27	-11.75
2	-12.69	12	-12.06	Oct. 7	- 8.48
4	-12.38	13	-12.17	Dec. 21	- 7.30

(B-2-1)36ca6. Moss Dairy, Woods Cross, Davis County. Diameter 3 inches, depth 85 feet. Measuring point, top of casing, 17.5 feet below land surface. Depth to water: Apr. 7, 1936, 19.72 feet.

(B-2-1)36cb5. M. A. Lundberg, Woods Cross, Davis County. Diameter 3 inches, depth 200 feet. Measuring point, top of casing, 0.2 foot above land surface. Depth to water: Mar. 25, 1936, 9.52 feet.

(B-2-1)36cb6. M. A. Lundberg, Woods Cross, Davis County. Diameter $1\frac{1}{4}$ inches, depth 200 feet. Measuring point, top of pitcher pump, 1.5 feet above land surface. Depth to water: Mar. 25, 1936, 10.73 feet.

(B-2-1)36cc1. Farmers State Bank, Woods Cross, Davis County. Diameter $1\frac{1}{2}$ inches, depth 240 feet. Measuring point, top of casing, 2.0 feet above land surface and 4,285.17 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 10, 1931	-6.95	May 19, 1933	-3.95	May 7, 1936	-2.81
Nov. 13	-6.08	Dec. 9	-2.70	9	-2.66
Dec. 15	-5.93	Mar. 29, 1934	-3.87	11	-2.90
Jan. 11, 1932	-5.54	Aug. 14, 1935	-7.33	12	-3.15
Feb. 6	-5.71	Oct. 18	-6.29	13	-3.32
Mar. 7	-5.79	Dec. 5	-3.85	14	-3.22
Apr. 11	-5.89	Jan. 3, 1936	-4.11	15	-3.29
May 11	-5.04	Mar. 13	-3.68	18	-3.50
June 9	-4.49	19	-3.60	21	-3.49
July 8	-4.67	23	-3.50	27	-3.65
Aug. 12	-4.42	Apr. 23	-3.37	June 25	-2.03
Sept. 12	-4.08	29	-3.31	July 11	-1.55
Oct. 6	-3.61	May 1	-3.50	22	-1.10
Nov. 3	-3.22	2	-3.32	Aug. 12	-1.50
Dec. 10	-2.89	4	-2.98	Oct. 5	- .49
Jan. 12, 1933	-2.94	5	-2.79	Nov. 10	a/+ .65
Mar. 20	-3.34	6	-2.94	Dec. 21	a/+2.00

(B-2-1)36cd1. Mrs. J. W. Moss, Woods Cross, Davis County. Diameter 36 inches, depth 40 feet. Measuring point, top of brick curb, 1.5 feet below land surface. Depth to water: Apr. 6, 1936, 33.71 feet.

(B-2-1)36cd5. Emma Burns, Woods Cross, Davis County. Diameter 36 inches, depth 47 feet. Measuring point, top of union on pipe, 9.2 feet below land surface. Depth to water: Apr. 7, 1936, 20.87 feet.

(B-3-1)15aa. Drought Relief Administration, Farmington, Davis County. Diameter 12 $\frac{1}{2}$ inches, depth 720 feet. Measuring point, top of casing, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 11, 1935	-17.55	June 25, 1936	-16.79	Oct. 7, 1936	-17.11
Mar. 2, 1936	-17.08	Aug. 12	-17.03	Dec. 15	-16.80
May 8	-17.03				

(B-3-1)24aa1. A. L. Clarke, Farmington, Davis County. Diameter 4 inches, depth 60 feet. Measuring point, top of ell on casing, 0.8 foot above land surface. Pressure head: Aug. 14, 1935, 6.25 feet.

(B-3-1)24aa2. Lagoon Resort, Farmington, Davis County. Diameter 2 inches, depth 310 feet. Measuring point, top of casing, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 14, 1935	<u>a</u> /+1.58	Dec. 8, 1935	+6.2	Aug. 12, 1936	<u>a</u> /+6.8
Oct. 18	+6.45	May 8, 1936	<u>a</u> /+7.35	Oct. 7	+9.3

(B-3-1)24aa3. Lagoon Resort, Farmington, Davis County. Diameter 2 inches, depth 40 feet. Measuring point, top of casing, 1.2 feet above land surface. Pressure head: Aug. 14, 1935, 0.33 foot (found flowing).

(B-3-1)24aa4. Lagoon Resort, Farmington, Davis County. Diameter 2 inches, depth 60 feet. Measuring point, top of casing, 1.7 feet above land surface. Pressure head: Aug. 14, 1935, 0.41 foot (found flowing).

(B-3-1)24aa5. Lagoon Resort, Farmington, Davis County. Diameter 2 inches, depth 102 feet. Measuring point, top of coupling on casing, 1.0 foot above land surface. Pressure head: Aug. 14, 1935, 1.15 feet (found flowing; leaking during test); May 8, 1936, 5.1 feet (found flowing).

(B-3-1)24aa6. Lagoon Resort, Farmington, Davis County. Diameter 3 inches, depth 45 feet. Measuring point, top of casing, 5.15 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 14, 1935	+5.15	Mar. 2, 1936	+7.3	Aug. 12, 1936	<u>b</u> /+7.75
Oct. 18	+5.6	May 8	+8.5	Oct. 7	+7.85
Dec. 8	+5.8	June 27	+9.3	Dec. 15	+7.5

(B-3-1)24aa7. Lagoon Resort, Farmington, Davis County. Diameter 3 inches, depth 105 feet. Measuring point, top of casing, 0.1 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 14, 1935	+4.13	Mar. 2, 1936	+8.25	Aug. 12, 1936	<u>b</u> /+8.45
Oct. 18	+7.75	May 8	+9.2	Oct. 7	+9.9
Dec. 8	+7.4	June 27	+7.9	Dec. 15	+9.2

(B-3-1)24aa9. Lagoon Resort, Farmington, Davis County. Depth 722 feet. Measuring point, top of northeast corner of pit, at land surface. Pressure head: Aug. 14, 1935, 5.0 feet (found flowing).

a/ Found flowing.

b/ Pump operating in nearby well.

(B-4-1)19cd. Charles Layton, Layton, Davis County. Diameter 2 inches, depth 450 feet. Measuring point, top of tee on casing, 1.6 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 11, 1935	-2.30	June 25, 1936	- .20	Oct. 7, 1936	a/+1.84
Mar. 2, 1936	-2.23	Aug. 12	a/+ .93	Dec. 15	b/-1.62
May 8	-1.80				

(B-4-1)20cb. Layton Sugar Co., Layton, Davis County. Diameter 12 inches, depth 572 feet. Measuring point, center line of air gage, at land surface. Air-gage readings prior to August 1935 reported by owner.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 16, 1931	-47.1	June 22, 1933	-43.1	Aug. 15, 1936	-46.5
Aug. 27, 1932	-40.8	Apr. 3, 1935	-47.7		

(B-4-1)29cc. G. E. Briggs, Kaysville, Davis County. Diameter 36 inches, depth 12 feet. Measuring point, top of wood curb, 3.1 feet above land surface. Depth to water: Aug. 15, 1935, 8.02 feet.

(B-4-1)29cd1. W. A. Roberts, Kaysville, Davis County. Diameter 2 inches, depth 420 feet. Measuring point, top of outlet pipe from tee, 2.5 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 15, 1935	+4.01	June 25, 1936	+6.8	Oct. 7, 1936	+8.4
Oct. 18	+4.35	Aug. 12	+7.3	Dec. 15	+5.5
May 8, 1936	+5.2				

(B-4-1)29cd2. W. A. Roberts, Kaysville, Davis County. Diameter 2 inches. Measuring point, top of outlet pipe, 2.8 feet above land surface. Pressure head: Aug. 15, 1935, 1.77 feet (found flowing).

(B-4-1)29dc. Thomas Robins, Kaysville, Davis County. Diameter 2 inches, depth 450 feet. Measuring point, top of casing, 1.0 foot below land surface. Depth to water: Aug. 15, 1935, 2.27 feet; Oct. 18, 1935, 2.06 feet; Dec. 8, 1935, 1.78 feet (water flowing out of well into pit prior to all measurements).

(B-4-1)30ba. W. W. Evans, Layton, Davis County. Diameter 2 inches. Measuring point, top of ell on casing, 3.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 11, 1935	-4.56	June 25, 1936	-3.88	Oct. 7, 1936	-3.20
Mar. 2, 1936	-4.36	Aug. 12	-2.67	Dec. 15	-4.38
May 8	-4.29				

(B-4-1)30dd. Chris Burton, Layton, Davis County. Diameter 2 inches. Measuring point, top of tee on casing, 3.0 feet above land surface. Pressure head: Aug. 15, 1935, 17.3 feet (found flowing).

(B-4-1)32bd. J. M. Hill, Kaysville, Davis County. Diameter 2 inches, depth 450 feet. Measuring point, top of casing, 2.3 feet above land surface. Pressure head: Oct. 18, 1935, 11.45 feet.

a/ Found flowing.

b/ Recent pumping reported in adjacent well.

(B-4-1)32bd. Henry Flint, Kaysville, Davis County. Diameter 2 inches, depth 400 feet. Measuring point, top of ell on casing, 2.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 2, 1936	+20.6	June 25, 1936	a/+19.8	Oct. 7, 1936	a/+20.55
May 8	+22.1	Aug. 12	a/+20.1		

(B-4-1)33bb. J. E. Flint, Kaysville, Davis County. Diameter 2½ inches, depth 600 feet. Measuring point, top of ell on casing, 1.5 feet above land surface. Pressure head: Oct. 7, 1936, 6.25 feet (found flowing); Dec. 15, 1936, 4.4 feet (found flowing).

(B-4-2)1dc. Drought Relief Administration, Clearfield, Davis County. Diameter 10 inches, depth 644 feet. Measuring point, top of concrete pump base, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 2, 1936	-181.25	June 27, 1936	-178.98	Dec. 10, 1936	-174.50
May 12	-180.17	Aug. 16	-177.40		

(B-4-2)10da. Drought Relief Administration, Syracuse, Davis County. Diameter 12 inches, depth 777 feet. Measuring point, top of hole in pump base, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 12, 1936	-40.0	June 25, 1936	-39.13	Oct. 7, 1936	-37.50
Mar. 7	-40.24	Aug. 12	-38.32	Dec. 15	-37.26
May 8	-40.37				

(B-5-2)4cd. C. A. Creamer, Kanesville, Weber County. Diameter 3 inches. Measuring point, top of concrete trough, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 3, 1936	a/+29.6	June 25, 1936	a/+33.1	Oct. 7, 1936	+34.7
May 8	+31.5	Aug. 12	+34.15	Dec. 11	+34.25

(B-5-2)8bb. T. R. Jones, Kanesville, Weber County. Diameter 2 inches, depth 600 feet. Measuring point, top of outlet of tee, 1.4 feet above land surface. Pressure head: Dec. 7, 1935, 31.8 feet (found flowing).

(B-5-2)12dc. A. P. Bigelow, Riverdale, Weber County. Diameter 48 inches, depth 14 feet. Measuring point, top of 4-inch pipe, 3.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 8, 1935	-3.65	June 27, 1936	-4.36	Oct. 16, 1936	-3.71
Mar. 2, 1936	-3.21	Aug. 16	-3.14	Dec. 10	-4.40
May 12	-4.81				

(B-5-2)25bb. Drought Relief Administration, Sunset, Davis County. Diameter 12 inches, depth 212 feet. Measuring point, top of casing, 0.2 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 2, 1936	-193.27	June 27, 1936	-191.76	Oct. 16, 1936	-189.47
May 12	-189.30	Aug. 16	-190.55	Dec. 10	-188.37

(B-5-2)26aa. J. J. Sepal, Sunset, Davis County. Diameter 42 inches, depth 15 feet. Measuring point, top of well cover, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 8, 1935	-2.52	June 27, 1936	-3.30	Oct. 16, 1936	-3.50
Mar. 2, 1936	-3.01	Aug. 16	-2.35	Dec. 10	-4.65
May 12	-2.90				

(B-5-3)12ad. F. V. Simpson, Hooper, Weber County. Diameter 2 inches, depth 376 feet. Measuring point, top of ell over valve, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 7, 1935	+19.6	June 25, 1936	a/+18.2	Oct. 7, 1936	a/+17.55
Mar. 3, 1936	+20.6	Aug. 12	a/+17.2	Dec. 11	a/+18.5
May 8	a/+20.5				

(B-5-3)15dd. T. W. Read, Hooper, Weber County. Diameter 2 inches, depth 639 feet. Measuring point, top of outlet of tee, 3.00 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 3, 1936	+44.25	June 25, 1936	a/+43.3	Oct. 7, 1936	+43.8
May 8	+44.75	Aug. 12	+43.65	Dec. 11	+43.95

(B-5-3)36ad1. Anthony Stoddard, West Point, Davis County. Diameter 3 inches, depth 450 feet. Measuring point, top of casing, 0.6 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 5, 1935	+25.8	June 25, 1936	a/+17.6	Oct. 7, 1936	+27.25
Mar. 3, 1936	+29.5	Aug. 12	+25.3	Dec. 11	+29.6
May 8	a/+21.5				

(B-5-3)36ad2. Anthony Stoddard, West Point, Davis County. Diameter 2 inches, depth 205 feet. Measuring point, top of coupling on casing, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 12, 1936	+15.5	Aug. 12, 1936	+14.4	Dec. 11, 1936	+15.8
June 26	+14.75	Oct. 7	+14.05		

(B-6-1)6db. Ogden Pressed Brick Co., Harrisville, Weber County. Diameter 3 inches, depth 502 feet. Measuring point, top of tee on casing, 1.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 27, 1936	+45.2	Oct. 7, 1936	+46.0	Dec. 10, 1936	+47.4
Aug. 16	+47.1				

a/ Found flowing.

(B-6-1)21ab. Drought Relief Administration, Ogden, Weber County. Diameter 12 inches, depth 226 feet. Measuring point, top of casing, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 3, 1936	-33.83	June 27, 1936	-32.39	Oct. 8, 1936	-35.54
May 12	-32.63	Aug. 16	-35.68	Dec. 10	-33.06

(B-6-2)1bb. Ivan Carver, Farr West, Weber County. Diameter 3 inches. Measuring point, top of outlet of tee, 2.7 feet above land surface. Pressure head: Mar. 7, 1936, 14.6 feet (found flowing).

(B-6-2)17db. H. C. Gibson, West Weber, Weber County. Diameter 2 inches, depth 420 feet. Measuring point, top of concrete trough, 2.0 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 7, 1935	+13.0	June 25, 1936	+12.25	Oct. 7, 1936	+12.35
Mar. 4, 1936	+13.8	Aug. 13	+12.15	Dec. 11	+13.35
May 9	+13.6				

(B-6-2)25bd1. George Bitton, Ogden, Weber County. Diameter 2 inches, depth 428 feet. Measuring point, top of ell on casing, 1.5 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 16, 1935	+9.85	Dec. 8, 1935	+10.55	May 9, 1936	+12.35
Oct. 18	+9.05	Mar. 3, 1936	+11.2	June 25	+12.5

Observations discontinued; well leaking around casing.

(B-6-2)25bd2. Elmer Bitton, Ogden, Weber County. Diameter 1½ inches, depth 380 feet. Measuring point, top of bushing over casing, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 13, 1936	a/+14.15	Oct. 7, 1936	a/+14.5	Dec. 11, 1936	+15.95

(B-6-2)25bd3. T. J. Wilson, Ogden, Weber County. Diameter 2 inches, depth 475 feet. Measuring point, top of south opening of cross, 1.0 foot above land surface. Pressure head: Oct. 18, 1935: 9.75 feet (found flowing).

(B-6-1)26aa. Amalgamated Sugar Co., Ogden, Weber County. Diameter 2 inches, depth 500 feet. Measuring point, top of union, 1.2 feet above land surface. Pressure head: Aug. 16, 1935, 6.3 feet (found flowing).

(B-6-2)26ad. Drought Relief Administration, Ogden, Weber County. Diameter 16 inches, depth 600 feet. Measuring point, top of flange of 6-inch tee, 2.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 16, 1935	+13.85	Mar. 4, 1936	+15.55	Aug. 12, 1936	+16.0
Oct. 18	+13.1	May 9	+16.35	Oct. 7	+15.85
Dec. 8	+14.35	June 25	+16.5	Dec. 11	+17.0

a/ Found flowing.

(B-6-3)26bb. Mrs. F. V. Kelly, West Warren, Weber County. Diameter 2 inches, depth 512 feet. Measuring point, top of ell on casing, 2.5 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 7, 1935	+26.5	June 25, 1936	+26.4	Oct. 7, 1936	+26.1
Mar. 4, 1936	+27.35	Aug. 13	+26.2	Dec. 11	+26.5
May 9	+27.05				

(B-7-1)29dd. C. M. Barker, North Ogden, Weber County. Diameter 4 inches, depth 245 feet. Measuring point, top of flange at valve, 5.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1935	a,b/+35.0	May 12, 1936	a,b/+40.3	Aug. 16, 1936	a,b/+50.9
Dec. 7	b/+56.4	June 27	a,b/+46.1	Oct. 8	a,b/+48.8

(B-7-1)32aa. C. M. Barker, North Ogden, Weber County. Diameter 3 inches, depth 300 feet. Measuring point, top of bushing on tee, 1.3 feet above land surface. Measurements by 100' altitude gage.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 12, 1936	+59.7	Aug. 16, 1936	+72.5	Dec. 10, 1936	+81.5
June 27	+69	Oct. 8	+75		

(B-7-1)32ad. Joseph Folkman, North Ogden, Weber County. Diameter 2 inches, depth 60 feet. Measuring point, top of ell on casing, 3.0 feet above land surface. Adjacent well (4 feet south) flowing during all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1935	c/+3.71	Mar. 4, 1936	c/+7.05	Aug. 16, 1936	+7.1
Oct. 29	c/+6.9	May 12	c/+5.1	Oct. 8	c/+6.8
Dec. 7	c/+7.35	June 27	c/+5.9	Dec. 10	c/+8.0

(B-7-2)2ab. Earl Lemon, Willard, Box Elder County. Diameter 10 inches, depth 65 feet. Measuring point, top of casing, 43.5 feet below land surface. Record begins May 27, 1917; see Water-Supply Paper 777, pp. 240-241, for measurements prior to Oct. 27, 1935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 27, 1935	d/-7.00	Apr. 18, 1936	d/+3.00	Aug. 7, 1936	d/+1.85
Nov. 16	d/-7.30	26	d/- .35	13	+1.65
Dec. 1	d/-7.40	28	d/- .00	25	d/+1.57
7	-7.42	May 2	d/+1.00	Sept. 10	d/+1.50
14	d/-7.45	7	d/+1.75	18	d/+1.43
Jan. 1, 1936	d/-7.45	9	+2.22	25	d/+1.33
16	d/-7.45	12	+2.58	Oct. 7	d/+1.17
Feb. 1	d/-7.40	17	+3.09	8	+1.14
12	d/-7.50	24	d/+3.50	18	d/+1.10
23	d/-7.25	June 5	d/+3.50	28	d/+1.00
Mar. 1	d/-7.15	13	d/+3.55	Nov. 20	d/+ .65
4	-6.93	21	d/+3.45	Dec. 5	d/+ .57
7	-6.80	27	+3.08	11	+ .52
21	d/-5.45	July 5	d/+2.65	21	d/+ .43
Apr. 10	d/-4.15	15	d/+2.35		

a/ Found flowing.

b/ Leaking at valves during test.

c/ Found partly open.

d/ Measurement by owner.

(B-7-2)2ac. Delbert Cook, Willard, Box Elder County. Diameter 4 inches, depth 96 feet. Measuring point, top of casing, 2.8 feet above land surface. Depth to water: May 17, 1936, 5.94 feet.

(B-7-2)2ca. Delbert Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of ell above valve, 2.7 feet above land surface. Pressure head: May 17, 1936, 7.2 feet (found flowing).

(B-7-2)2cbl. Delbert Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of ell on casing, 2.3 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 9, 1936	+33.6	June 27, 1936	+34.4	Oct. 8, 1936	+35.45
17	+33.4	Aug. 13	+34.35	Dec. 14	+39.4

(B-7-2)2cb2. Delbert Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of ell on well 2cbl, 2.3 feet above land surface. Pressure head: May 9, 1936, 11.8 feet (found flowing).

(B-7-2)2cb3. Delbert Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of ell on casing, 2.0 feet above land surface. Pressure head: May 9, 1936, 25.1 feet; May 17, 1936, 25.8 feet.

(B-7-2)2cb6. Addie McChesney, Willard, Box Elder County. Diameter 2 inches, depth 128 feet. Measuring point, top of casing, 0.6 foot above land surface. Pressure head: May 17, 1936, 9.9 feet (found flowing).

(B-7-2)2cb7. Addie McChesney, Willard, Box Elder County. Diameter 2½ inches, depth 247 feet. Measuring point, mark on rail, 1.5 feet above land surface. Pressure head: May 17, 1936, 24.05 feet (found flowing).

(B-7-2)2cbl0. Addie McChesney, Willard, Box Elder County. Diameter 2 inches, depth 150 feet. Measuring point, top of tee on casing, 1.3 feet above land surface. Pressure head: May 17, 1936, 7.5 feet (found flowing).

(B-7-2)2cbl1. Frank Cook, Willard, Box Elder County. Diameter 2½ inches, depth 230 feet. Measuring point, top of tee on outlet pipe, 0.5 foot above land surface. Pressure head: May 17, 1936, 10.8 feet (found flowing).

(B-7-2)2cbl2. I. S. Woodland, Willard, Box Elder County. Diameter 2½ inches, depth 214 feet. Measuring point, bottom of ell on casing, 2.5 feet above land surface. Pressure head: May 17, 1936, 16.8 feet (found flowing).

(B-7-2)2cc. I. S. Woodland, Willard, Box Elder County. Diameter 2½ inches, depth 150 feet. Measuring point, top of concrete trough, 2.6 feet above land surface. Pressure head: May 17, 1936, 9.9 feet (found flowing).

(B-7-2)3dal. Delbert Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of ell on casing, 1.7 feet above land surface. Pressure head: May 17, 1936, 13.6 feet (found flowing).

(B-7-2)3da2. Addie McChesney, Willard, Box Elder County. Diameter 2½ inches. Measuring point, top of ell on casing, 1.0 foot above land surface. Pressure head: May 17, 1936, 8.4 feet (found flowing).

(B-7-2)3db1. Frank Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of ell on casing, 2.1 feet above land surface. Pressure head: May 17, 1936, 5.4 feet (found flowing).

(B-7-2)3db2. Frank Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of tee on casing, 1.6 feet above land surface. Pressure head: May 17, 1936, 3.95 feet (found flowing).

(B-7-2)3db3. Frank Cook, Willard, Box Elder County. Diameter 2 inches. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: May 17, 1936, 4.65 feet (found flowing).

(B-7-2)11cd. Parley Deen, Willard, Box Elder County. Diameter 10 inches. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: Oct. 8, 1936, 21.95 feet; Dec. 11, 1936, 21.83 feet.

(B-7-2)21dc. John Maw, Plain City, Weber County. Diameter 1½ inches. Measuring point, top of ell on casing, 1.0 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 4, 1936	+1.93	June 25, 1936	+2.11	Oct. 7, 1936	+1.45
May 9	+1.65	Aug. 13	+1.75	Dec. 11	+2.30

(B-7-3)35da. Van Brach, Warren, Weber County. Diameter 2 inches, depth 241 feet. Measuring point, top of casing, 1.6 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 4, 1936	+9.35	June 25, 1936	+9.25	Oct. 7, 1936	+9.1
May 9	+9.3	Aug. 13	+9.25	Dec. 11	+9.2

(B-8-2)11bd. J. A. Ward, Willard, Box Elder County. Diameter 72 inches, depth 62 feet. Measuring point, bottom of wye on discharge pipe, 1.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 5, 1935	-61.27	June 27, 1936	a/-53.70	Aug. 16, 1936	-56.73
Dec. 7	-59.05	27	-52.98	Oct. 8	-57.90
Mar. 4, 1936	-57.49	Aug. 13	a/-57.90	Dec. 14	-55.60
May 9	-54.61				

(B-8-2)23cd. Drought Relief Administration, Willard, Box Elder County. Diameter 12½ inches, depth 255 feet. Measuring point, bottom of inspection opening, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1935	-50.90	Mar. 4, 1936	-46.53	Aug. 13, 1936	a/-47.35
29	-50.94	May 12	-38.72	Oct. 8	-46.58
Dec. 5	-49.03	June 27	-31.77	Dec. 14	-44.92

(B-8-2)26ca. George Braegger, Willard, Box Elder County. Diameter 3 inches, depth 235 feet. Measuring point, top of ell above valve, 2.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1935	+13.75	Mar. 4, 1936	+24.0	Aug. 13, 1936	b/+21.45
29	+15.55	May 9	+28.3	Oct. 8	b/+20.8
Dec. 5	+21.6	June 27	b/+27.8	Dec. 14	b/+24.1

(B-9-1)26bb. Drought Relief Administration, Mantua, Box Elder County. Diameter 12 inches, depth 455 feet. Measuring point, top of casing, at land surface. Depth to water: Oct. 4, 1935, 0.43 foot; Oct. 29, 1935, 0.35 foot; Dec. 5, 1935, found flowing around plug. Observations discontinued: pump installed, and water flowing out of casing.

a/ Pump operating in observation well.

b/ Found flowing.

(B-9-2)14da. Knudsen Brothers, Brigham, Box Elder County. Diameter 72 inches, depth 65 feet. Measuring point, top of beam spanning well, 1.5 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 4, 1935	-20.60	Mar. 4, 1936	-19.78	Aug. 13, 1936	a/-28.6
29	-20.42	May 9	a/-25.8	Oct. 8	-19.55
Dec. 5	-20.61	June 25	a/-25.3	Dec. 12	-20.07

(B-9-2)35dc. H. F. Hansen, Perry, Box Elder County. Diameter 72 inches, depth 54 feet. Measuring point, top of concrete curb, 0.2 foot above surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 4, 1935	-46.60	Mar. 4, 1936	-44.97	Aug. 13, 1936	-47.05
29	-45.98	May 9	-43.68	Oct. 8	-44.70
Dec. 7	-45.50	June 25	-43.58	Dec. 14	-43.95

(B-9-3)1bb. Federal Land Bank, Corinne, Box Elder County. Diameter 30 inches. Measuring point, top of casing, 1.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 7, 1936	-3.02	June 27, 1936	-5.26	Oct. 8, 1936	-4.68
May 12	-6.02	Aug. 16	-5.88	Dec. 12	-6.42

(B-10-3)8dc1. S. N. Cole, Bear River City, Box Elder County. Diameter 48 inches, depth 25 feet. Measuring point, bottom of pump base, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 7, 1936	-7.85	June 27, 1936	-8.70	Oct. 8, 1936	-9.74
May 12	-7.49	Aug. 14	-9.51	Dec. 12	-9.17

(B-10-3)8dc2. S. N. Cole, Bear River City, Box Elder County. Diameter 48 inches, depth 22 feet. Measuring point, top of wood curb, 1.1 feet above land surface. Depth to water: June 27, 1936, 17.68 feet; Oct. 8, 1936, 15.95 feet.

(B-10-3)9aa. Henry Berchtold, Bear River City, Box Elder County. Diameter 36 inches, depth 15 feet. Measuring point, top of well cover, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 7, 1936	-4.07	June 27, 1936	b/-3.91	Oct. 8, 1936	b/-4.92
May 12	-7.10	Aug. 14	b/-1.68	Dec. 12	-10.91

(B-11-1)3ca. Utah Power & Light Co., Mendon, Cache County. Diameter 2 inches, depth 103 feet. Measuring point, top of ell on casing, 2.0 feet above land surface. Pressure head: Oct. 13, 1936, 3.31 feet (found flowing); Dec. 14, 1936, 3.40 feet (found flowing).

a/ Pump operating in observation well.

b/ Adjacent irrigation ditch flowing.

(B-11-1)13bb. Alma Olsen, Logan, Cache County. Diameter 2 inches, depth 135 feet. Measuring point, top of valve above cross, 1.3 feet above land surface. Pressure head: Oct. 13, 1936, 37.1 feet; Dec. 14, 1936, 40.1 feet.

(B-11-1)35ca. James Lieshman, Wellsville, Cache County. Diameter 3 inches. Measuring point, top of ell above valve, 2.8 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 6, 1935	a/+ 9.3	June 26, 1936	a/+10.85	Oct. 11, 1936	a/+14.3
Mar. 5, 1936	a/+ 9.15	Aug. 13	a/+13.1	Dec. 14	+14.55
May 9	a/+10.15				

(B-11-1)35db. Andrew Hutcheson, Wellsville, Cache County. Diameter 2 inches, depth 87 feet. Measuring point, top of concrete trough, at land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 1, 1935	+0.86	May 9, 1936	+1.78	Oct. 11, 1936	+6.2
Dec. 6	+1.26	June 26	+2.77	Dec. 14	b/
Mar. 5, 1936	+1.55	Aug. 13	+4.7		

(B-11-3)17bc. John Kupfer, Tremonton, Box Elder County. Diameter 1 inch, depth 348 feet. Measuring point, top of ell on casing, 1.3 feet above land surface. Pressure head: Oct. 11, 1936, 1.95 feet (found flowing).

(B-11-3)17da. Reuben Fuller, Tremonton, Box Elder County. Diameter 3/4 inch, depth 335 feet. Measuring point, top of coupling, 0.4 foot above land surface. Pressure head: Oct. 11, 1936, 3.30 feet.

(B-11-3)17da. Reuben Fuller, Tremonton, Box Elder County. Diameter 1 inch, depth 405 feet. Measuring point, top of ell on casing, 1.7 feet above land surface. Pressure head: Oct. 11, 1936, 2.45 feet (found flowing).

(B-11-3)21bb1. J. A. House, Tremonton, Box Elder County. Diameter 15 inches, depth 7 feet. Measuring point, top of concrete casing, 1.3 feet above land surface. Depth to water: Oct. 11, 1936, 4.55 feet; Dec. 12, 1936, 4.75 feet.

(B-11-3)21bb2. J. A. House, Tremonton, Box Elder County. Diameter 2 1/2 inches, depth 120 feet. Measuring point, top of casing, 0.4 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 7, 1936	-5.35	June 27, 1936	-4.84	Oct. 11, 1936	-4.60
May 12	-5.39	Aug. 14	-4.53	Dec. 12	-4.54

(B-11-3)21bb3. J. A. House, Tremonton, Box Elder County. Diameter 2 inches, depth 600 feet. Measuring point, top of ell on casing, 1.3 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 29, 1935	+5.4	June 27, 1936	+5.35	Oct. 11, 1936	+5.3
Mar. 7, 1936	+5.0	Aug. 14	+5.15	Dec. 12	+5.1
May 12	+4.4				

a/ Found flowing.

b/ Well leaking around casing.

(B-11-3)27ba. George Stanquist, Tremonton, Box Elder County. Diameter 1 inch, depth 475 feet. Measuring point, top of ell on casing, 2.5 feet above land surface. Pressure head: Oct. 11, 1936, 4.8 feet (found flowing).

(B-11-4)11aa. Fred Deininger, Thatcher, Box Elder County. Diameter 6 inches, depth 151 feet. Measuring point, top of platform, 3.0 feet above land surface. Depth to water: Oct. 11, 1936, 10.32 feet; Dec. 12, 1936, 10.82 feet.

(B-11-4)14ba. I. D. Newman, Thatcher, Box Elder County. Diameter 4 inches, depth 152 feet. Measuring point, top of ell on casing, 1.2 feet above land surface. Pressure head: Oct. 11, 1936, 1.16 feet (found flowing); Dec. 12, 1936, 1.10 feet (found flowing).

(B-11-18)2b. Sidney Paskett, Grouse Creek, Box Elder County. Diameter 8 inches, depth 405 feet. Measuring point, ground surface. Depth to water: Oct. 10, 1936, 31.8 feet.

(B-11-18)2dc. Drought Relief Administration, Grouse Creek, Box Elder County. Diameter 10 inches, depth 395 feet. Measuring point, top of flange of valve, 0.5 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 31, 1935	+0.95	Aug. 15, 1936	+1.85	Oct. 9, 1936	+1.83

(B-11-18)22aa. Annie Paskett, Etna, Box Elder County. Diameter 48 inches, depth 24 feet. Measuring point, top of plank curbing, at land surface. Depth to water: Oct. 10, 1936, 23.6 feet.

(B-11-18)23bb. Central Pacific R.R., Etna, Box Elder County. Diameter 48 inches, depth 26½ feet. Measuring point, top of platform, at land surface. Depth to water: Oct. 10, 1936, 23.68 feet.

(B-12-1)8cd1. Edward Edwards, Petersboro, Cache County. Diameter 1½ inches, depth 210 feet. Measuring point, top of ell on casing, 0.8 foot above land surface. Pressure head: Mar. 6, 1936, 3.70 feet (found flowing).

(B-12-1)8cd2. Edward Edwards, Petersboro, Cache County. Diameter 2 inches, depth 210 feet. Measuring point, top of ell on casing, 2.0 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 6, 1936	+3.57	June 25, 1936	+3.91	Oct. 12, 1936	+4.6
May 10	+3.83	Aug. 14	+4.45	Dec. 14	+4.0

(B-12-1)14ab. Benson school district, Benson, Cache County. Diameter 2 inches. Measuring point, top of ell on casing, 2.0 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 5, 1936	+ 9.65	June 26, 1936	+10.55	Oct. 12, 1936	+10.5
May 10	+12.6	Aug. 14	+12.45	Dec. 13	+11.85

(B-12-1)26cd. Joseph Schvaneveldt, Logan, Cache County. Diameter 2 inches, depth 228 feet. Measuring point, top of ell on casing, 1.5 feet above land surface. Pressure head: Oct. 13, 1936, 15.55 feet (found flowing); Dec. 14, 1936, 15.8 feet (found flowing).

(B-12-3)11db. R. D. MacFarlane, Riverside, Box Elder County. Diameter 1½ inches, depth 20 feet. Measuring point, lip of pitcher pump, 2.8 feet above land surface. Depth to water: Aug. 14, 1936, 7.99 feet; Oct. 11, 1936, 7.70 feet.

(B-12-3)26ac. M. C. Rampton, Garland, Box Elder County. Diameter $1\frac{1}{4}$ inches, depth 23 feet. Measuring point, lip of pitcher pump, 1.8 feet above land surface. Depth to water, June 26, 1936, 13.00 feet; Aug. 14, 9.41 feet; Oct. 11, 12.90 feet; Dec. 12, 15.40 feet.

(B-12-4)11cal. Adolph Harris, Tremonton, Box Elder County. Diameter 4 inches, depth 132 feet. Measuring point, top of casing, 1.3 feet above land surface. Depth to water, May 11, 1936, 131.33 feet; Aug. 16 (windmill pumping), 134.0 feet; Oct. 8, 132.05 feet; Dec. 12, 132 feet.

(B-12-4)11ca2. J. W. Thornley, Tremonton, Box Elder County. Diameter 4 inches, depth 99 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Oct. 9, 1936, 96.40 feet.

(B-12-4)22cd. Fannie Payne, Tremonton, Box Elder County. Diameter 4 inches. Measuring point, top of casing, 2.3 feet above land surface. Depth to water: Oct. 9, 1936, 196.5 feet.

(B-12-11)8. Gus Felhman, Kelton, Box Elder County. Diameter $6\frac{1}{4}$ inches, depth 510 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Oct. 10, 1936, 60.5 feet.

(B-12-11)22. Drought Relief Administration, Kelton, Box Elder County. Diameter 8 inches, depth 126 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water, Oct. 31, 1935, 9.76 feet; May 11, 1936, 8.85 feet; Aug. 16, 9.88 feet; Oct. 10, 9.95 feet.

(B-12-11)28ba. Albert Crandall, Kelton, Box Elder County. Diameter 2 inches, depth 60 feet. Measuring point, top of ell on casing, 1.2 feet above land surface. Well flowing prior to all measurements. Pressure head, Oct. 31, 1935, 0.03 foot; May 11, 1936, 0.28 foot; Aug. 16, 0.11 foot; Oct. 10, 0.03 foot.

(B-12-14)2aa. Albert Hirschie, Rosette, Box Elder County. Diameter 48 inches, depth 16 feet. Measuring point, top of platform, 0.8 foot above land surface. Depth to water: Oct. 10, 1936, 11.90 feet.

(B-12-14)2ac. F. J. Hirschie, Rosette, Box Elder County. Diameter 4 inches, depth 203 feet. Measuring point, bottom of pump base, 0.7 foot above land surface. Depth to water: Oct. 31, 1935, 0.7 foot (found flowing).

(B-12-18)13ad. Elmer Kimber, Grouse Creek, Box Elder County. Diameter 60 inches, depth 18 feet. Measuring point, top of railroad tie, 0.5 foot above land surface. Depth to water: Oct. 9, 1936, 16.92 feet.

(B-12-18)25ba. Elmer Kimber, Grouse Creek, Box Elder County. Diameter 54 inches, depth 21 feet. Measuring point, top of tie curbing, at land surface. Depth to water: Oct. 9, 1936, 18.90 feet.

(B-13-1)30db. E. R. Ballard, Cache Jct., Cache County. Diameter 2 inches, depth 90 feet. Measuring point, top of ell on casing, 3.0 feet above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 6, 1936	+12.75	June 26, 1936	+13.6	Oct. 12, 1936	+14.95
May 10	+14.1	Aug. 14	+14.65	Dec. 14	+14.75

(B-13-3)11dd. J. F. Archibald, Plymouth, Box Elder County. Diameter 6 inches, depth 100 feet. Measuring point, top of coupling on casing, 0.5 foot above land surface. Depth to water: Mar. 6, 1936, 2.52 feet (flowing into sump).

(B-13-5)17bb. Ross Miller, Blue Creek, Box Elder County. Diameter 4 inches, depth 135 feet. Measuring point, top of casing, 1.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 30, 1935	-66.68	Aug. 16, 1936	-78.09	Dec. 12, 1936	-63.10
May 11, 1936	a/-96.55	Oct. 9	-71.13		

(B-13-5)28cb. Joseph Aebischur, Blue Creek, Box Elder County. Diameter 4 inches, depth 152 feet. Measuring point, top of coupling on casing, 1.5 feet above land surface. Depth to water: Oct. 9, 1936, 62.83 feet; Dec. 12, 1936, 62.94 feet.

(B-13-13)28dd. Arnold Goodliffe, Park Valley, Box Elder County. Diameter 48 inches, depth 19 feet. Measuring point, top of platform, 1.0 foot above land surface. Depth to water: Oct. 10, 1936, 14.65 feet.

(B-13-13)32aa. John Vance, Park Valley, Box Elder County. Diameter 60 inches, depth 50 feet. Measuring point, top of platform, at land surface. Depth to water: Oct. 10, 1936, 32.25 feet.

(B-13-14)25cb. J. H. Kunzler, Rosette, Box Elder County. Diameter 48 inches, depth 28 feet. Measuring point, top of platform, 0.3 foot above land surface. Depth to water: Oct. 10, 1936, 16.05 feet.

(B-13-14)26bd. W. A. Newman, Rosette, Box Elder County. Diameter 48 inches, depth 22 feet. Measuring point, top of concrete curb, 0.8 foot above land surface. Depth to water: Oct. 10, 1936, 19.47 feet.

(B-14-3)22dd. Wayne Mason, Plymouth, Box Elder County. Diameter 4 inches. Measuring point, top of casing, 2.3 feet above land surface. Depth to water: Mar. 6, 1936, 47.27 feet.

(B-14-8)11ab. B. S. Cutler, Snowville, Box Elder County. Diameter 4 inches, depth 64 feet. Measuring point, top of coupling on casing, 1.0 foot above land surface. Depth to water: Oct. 9, 1936, 47.24 feet.

(B-14-9)10ad. Abe Rose, Snowville, Box Elder County. Diameter 5 inches, depth 171 feet. Measuring point, top of collar on casing, 1.1 feet above land surface. Depth to water: May 11, 1936, 101.23 feet; Aug. 16, 1936, 100.16 feet; Oct. 9, 1936, 99.64 feet.

(B-14-15)3dd. M. A. Smith, Yost, Box Elder County. Diameter 48 inches, depth 56 feet. Measuring point, top of platform, 0.2 foot above land surface. Depth to water: Oct. 30, 1935, 51.02 feet; Aug. 16, 1936 (stopped windmill for measurement), 48.47 feet; Oct. 9, 1936, 51.45 feet.

(B-14-15)11cc. Mrs. C. B. Tracy, Yost, Box Elder County. Diameter 48 inches, depth 31 feet. Measuring point, top of plank under house, 0.5 foot above land surface. Depth to water: Oct. 9, 1936, 26.40 feet.

(B-15-14)36. H. Alberts, Standrod, Box Elder County. Diameter 24 inches, depth 10 feet. Measuring point, top of wood box, 2.5 feet above land surface. Depth to water: Aug. 15, 1936, 7.65 feet; Oct. 9, 1936, 8.05 feet.

(C-1-1)15ab. Wm. Davis, Salt Lake City, Salt Lake County. Diameter 2 inches, depth 138 feet. Measuring point, top of tee, 0.8 foot above land surface and 4,230.01 feet above sea level. Field No. 180; Salt Lake City Corporation No. 935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 30, 1931	+2.95	Feb. 1, 1932	+4.01	July 5, 1932	+3.32
Oct. 9	+3.03	Mar. 1	+4.13	Aug. 5	+3.08
Nov. 4	+3.77	Apr. 8	+4.34	Sept. 30	+3.23
Dec. 4	+3.85	May 2	+3.96	Oct. 28	+3.52
Jan. 4, 1932	+3.81	June 1	+3.49	Dec. 6	+3.43

a/ 20 minutes after stopping windmill.

(C-1-1)15ab. Wm. Davis.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 11, 1933	+3.36	Mar. 9, 1936	a/+3.62	Aug. 12, 1936	a/+3.15
Mar. 24	+3.73	19	a/+4.05	20	+3.03
May 9	+3.81	27	a/+3.95	26	a/+2.79
Oct. 9	+3.34	Apr. 6	a/+3.90	Sept. 10	a/+2.96
Aug. 13, 1934	+2.44	13	+4.00	23	a/+3.15
Oct. 29	+3.15	25	a/+3.63	Oct. 2	+3.29
Oct. 24, 1935	+2.90	May 27	a/+3.25	7	a/+3.16
Feb. 19, 1936	a/+3.60	June 6	+3.60	Nov. 24	a/+3.80
Feb. 28	+3.59	22	a/+3.10	Dec. 7	+3.83
Feb. 29	a/+3.50	July 31	a/+2.90	19	a/+3.88

(C-1-1)22bd. Wm. Gedge, Salt Lake City, Salt Lake County. Diameter 2 inches, depth 320 feet. Measuring point, top of ell, 2.0 feet above land surface and 4,238.96 feet above sea level. Field no. 101; Salt Lake City Corporation no. 1289.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1931	+ 7.50	Aug. 4, 1932	+ 9.23	Mar. 30, 1933	+ 8.87
Nov. 12	+ 9.66	11	+ 8.80	Apr. 6	+ 8.87
Dec. 14	+ 9.52	18	+ 9.23	13	+ 8.88
Jan. 11, 1932	+ 9.66	25	+ 9.23	20	+ 8.73
Feb. 6	+ 9.37	Sept. 1	+ 9.37	29	+ 9.39
25	+ 9.08	8	+ 9.23	May 4	+ 9.89
Mar. 3	+ 9.08	15	+ 8.94	11	+ 8.66
10	+ 9.08	22	+ 9.15	18	+ 8.81
17	+ 9.08	30	+ 9.08	25	+ 8.88
24	+ 9.08	Oct. 6	+ 9.08	June 1	+ 8.80
31	+ 9.01	13	+ 9.08	15	+ 9.23
Apr. 7	+ 9.23	20	+ 9.08	29	+ 9.16
14	+ 9.08	27	+ 9.15	July 6	+10.03
21	+ 8.94	Nov. 3	+ 9.23	Oct. 9	+ 8.07
28	+ 8.65	10	+ 9.23	Nov. 17	+ 8.00
May 5	+ 8.73	17	+ 9.08	Dec. 21	+ 7.93
12	+ 8.65	Dec. 1	+ 8.94	Jan. 11, 1934	+ 9.37
19	+ 8.73	8	+ 9.01	Aug. 6	+ 8.14
26	+ 8.65	Jan. 12, 1933	+ 8.73	Oct. 29	+ 8.40
June 2	+ 8.80	19	+ 8.80	May 15, 1935	a/+ 8.30
10	+ 8.87	26	+ 8.65	Oct. 24	+ 7.85
16	+ 9.08	Feb. 2	+ 8.65	Feb. 28, 1936	+ 8.60
23	+ 9.30	16	+ 8.80	Apr. 13	+ 8.65
30	+ 9.23	23	+ 8.65	June 6	+ 8.70
July 7	+10.38	Mar. 2	+ 8.65	July 23	+ 8.60
14	+ 8.65	16	+ 8.80	Oct. 2	+ 8.85
21	+ 8.58	23	+ 8.73	Dec. 7	+ 9.30
28	+ 9.37				

(C-1-1)28cd. Edna May Hill, Salt Lake City, Salt Lake County. Diameter 2 inches, depth 303 feet. Measuring point, top of tee, 2.5 feet above land surface and 4,254.21 feet above sea level. Field no. 106; Salt Lake City Corporation no. 1285.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1931	+20.90	Nov. 4, 1932	+17.88	July 15, 1935	a/+ 9.65
Nov. 12	+19.48	Dec. 12	+16.37	Oct. 7	a/+11.00
Dec. 14	+18.17	Jan. 9, 1933	+17.17	25	+11.45
May 11, 1932	+15.44	Mar. 6	+15.08	Feb. 28, 1936	+ 9.60
June 10	+14.87	May 16	+15.58	Apr. 13	+ 9.10
July 9	+14.72	Oct. 9	+20.62	June 6	+11.20
Aug. 10	+14.14	Aug. 6, 1934	+13.05	July 23	+10.50
Sept. 10	+17.88	Oct. 30	+12.80	Oct. 2	+12.50
Oct. 5	+18.46	May 13, 1935	a/+12.00	Dec. 7	+12.50

a/ By Salt Lake City Corporation.

(C-1-1)33ab. W. D. Hill, Salt Lake City, Salt Lake County. Diameter 2 inches, depth 373 feet. Measuring point, top of tee, 2.0 feet above land surface and 4,252.67 feet above sea level. Field no. 328; Salt Lake City Corporation no. 1286.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 14, 1931	+15.87	Oct. 5, 1932	+16.80	June 17, 1935	a/+10.00
Jan. 9, 1932	+15.73	Nov. 4	+17.59	July 15	a/+ 9.70
Feb. 8	+15.44	Dec. 12	+16.44	Oct. 7	a/+ 9.80
Mar. 8	+14.87	Jan. 9, 1933	+16.01	25	+10.05
Apr. 2	+14.28	Mar. 21	+13.92	Feb. 28, 1936	+ 9.95
May 11	+10.96	May 16	+12.84	Apr. 13	+ 9.95
June 10	+13.70	Oct. 9	+13.85	June 6	+ 9.30
July 9	+12.41	Aug. 6, 1934	+ 9.81	July 23	+ 8.30
Aug. 10	+13.70	Oct. 30	+11.15	Oct. 2	+11.10
Sept. 10	+15.08	May 13, 1935	a/+11.40	Dec. 7	+12.60

(C-1-2)5bbl. Royal Crystal Salt Co., Saltair, Salt Lake County. Diameter 3 inches, depth 660 feet. Measuring point, top of outlet pipe, 1.0 foot above land surface and 4,210.19 feet above sea level. Owner's no. 1; field no. 159; Salt Lake City Corporation no. 1273.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 25, 1931	+10.96?	July 7, 1932	+18.31	Oct. 30, 1934	+16.90
Oct. 9	+18.03	Aug. 11	+18.24	May 10, 1935	a/+16.60
Nov. 12	+19.33	Sept. 8	+19.33	Oct. 24	+15.90
Dec. 15	+20.05	Oct. 5	+17.81	Feb. 28, 1936	+15.70
Jan. 9, 1932	+19.61	Nov. 3	+18.03	Apr. 13	+15.75
Feb. 9	+20.26	Dec. 13	+17.81	June 6	+15.50
Mar. 9	+19.33	Jan. 10, 1933	+17.17	July 23	+15.70
Apr. 11	+19.76	Mar. 23	+16.65	Oct. 2	+16.20
May 5	+19.48	May 16	+18.46	Dec. 7	+16.05
June 9	+19.76	Aug. 7, 1934	+16.80		

(C-1-2)19bd. Utah Copper Co., Magna, Salt Lake County. Diameter 20 inches, depth 333 feet. Measuring point, top of casing, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	-5.27	June 6, 1936	-4.40	Oct. 2, 1936	-4.37
Feb. 28, 1936	-4.55	July 23	-4.25	Dec. 7	-4.12
Apr. 13	-4.97				

(C-1-2)19da. Utah Copper Co., Magna, Salt Lake County. Diameter 2 inches, depth 166 feet. Measuring point, top of ell, 1.4 feet above land surface and 4,237.91 feet above sea level. Found flowing prior to all measurements except on Feb. 28, 1936. Field no. 152; Salt Lake City Corporation no. 1279.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 24, 1931	+9.75	Aug. 12, 1932	+8.44	Oct. 30, 1934	+5.40
Oct. 7	+9.45	Sept. 8	+9.24	May 13, 1935	a/+4.98
Nov. 10	+9.16	Oct. 5	+9.09	June 10	a/+4.82
Dec. 11	+7.86	Nov. 4	+8.95	July 15	a/+4.68
Jan. 9, 1932	+7.86	Dec. 13	+8.15	Oct. 24	+4.10
Feb. 9	+7.57	Jan. 10, 1933	+7.57	Feb. 28, 1936	+4.55
Mar. 9	+7.57	Mar. 21	+6.78	Apr. 13	+5.90
Apr. 12	+7.14	May 13	+6.56	June 6	+4.11
May 13	+6.14	June 20	+6.50	July 23	+4.70
June 10	+6.14	Oct. 9	+7.79	Oct. 2	+5.40
July 9	+6.85	Aug. 6, 1934	+4.98	Dec. 7	+6.75

a/ By Salt Lake City Corporation.

(C-1-2)21ad. Leo P. Beagley, Magna, Salt Lake County. Diameter 2 inches, depth 56 feet. Measuring point, center of ell, 2.0 feet above land surface and 4,233.55 feet above sea level. Found flowing prior to all measurements. Field no. 154; Salt Lake City Corporation no. 1278.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 7, 1931	+11.25	July 9, 1932	+ 9.81	Oct. 9, 1933	+ 9.95
Nov. 10	+10.96	Aug. 11	+10.82	Aug. 6, 1934	+ 8.58
Dec. 11	+10.53	Sept. 7	+11.32	Oct. 30	+ 8.15
Jan. 9, 1932	+10.38	Oct. 5	+11.39	May 13, 1935	a/+ 7.80
Feb. 9	+10.24	Nov. 4	+11.04	Oct. 24	+ 7.80
Mar. 8	+10.10	Dec. 12	+10.60	Feb. 28, 1936	+ 8.10
Apr. 12	+ 9.95	Jan. 10, 1933	+10.24	Apr. 13	+ 7.55
May 13	+ 9.59	Mar. 21	+10.10	June 6	+ 7.50
June 10	+ 9.59	May 13	+ 9.52	Oct. 2	+ 8.75

(C-1-2)22cb. Franklin E. Fowler, Magna, Salt Lake County. Diameter 2 inches, depth 110 feet. Measuring point, top of casing, 2.0 feet above land surface and 4,233.61 feet above sea level. Found flowing prior to all measurements until June 6, 1936. Field no. 198; Salt Lake City Corporation no. 1277.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 7, 1931	+11.54	Oct. 30, 1934	+ 8.75	Apr. 13, 1936	+ 8.00
Nov. 10	+11.54	May 13, 1935	a/+ 8.40	June 6	+ 7.85
Dec. 11	+10.82	June 10	a/+ 8.65	July 15	b/+ 6.7
Jan. 9, 1932	+10.96	July 15	a/+ 8.20	23	+ 8.95
Feb. 9	+10.96	Oct. 7	a/+ 7.75	Sept. 22	b/+ 9.1
Mar. 8	+10.53	24	+ 7.90	Oct. 2	+10.2
Apr. 12	+10.67	Feb. 28, 1936	+ 8.20	Dec. 7	+ 9.5
Aug. 6, 1934	+ 8.14				

(C-1-4)36bb. A. J. Williams, Lake Point, Tooele County. Diameter 2½ inches, depth 217 feet. Measuring point, top of tee, at surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 26, 1936	+9.4	June 13, 1936	+10.1	Sept. 18, 1936	+8.65
Apr. 13	+9.75	July 28	+ 9.85	Nov. 11	+9.4

(C-2-1)1ab. John L. Barr (C. S. Walters, tenant), Murray, Salt Lake County. Diameter 2 inches, depth 198 feet. Measuring point, center of outlet, 2.4 feet above land surface and 4,251.02 feet above sea level. Found flowing prior to all measurements. Field no. 91; Salt Lake City Corporation no. 685.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 23, 1931	+12.55	Sept. 8, 1932	a/+13.13	Nov. 16, 1933	a/+14.30
Oct. 13	+13.00	Oct. 13	a/+14.14	Jan. 3, 1934	a/+14.60
Nov. 5	+13.85	Nov. 28	a/+16.15	Feb. 6	a/+14.70
Dec. 8	+13.56	Jan. 5, 1933	a/+14.43	Apr. 23	a/+13.50
Jan. 5, 1932	+13.42	Feb. 2	a/+14.27	May 21	a/+12.25
Feb. 10	+13.56	Mar. 13	a/+15.00	July 16	a/+11.20
Mar. 4	+14.14	Apr. 10	a/+15.00	Sept. 5	a/+11.40
Apr. 16	+14.57	May 1	a/+14.80	Oct. 16	a/+13.00
May 4	+14.28	June 2	a/+13.70	Nov. 14	a/+13.30
June 3	+13.06	July 6	a/+12.30	Dec. 15	a/+14.50
July 6	+11.97	Aug. 4	a/+12.10	Jan. 28, 1935	a/+14.65
Aug. 6	+11.90	Sept. 12,	a/+12.20	Feb. 21	a/+14.80
15	a/+11.68	Oct. 19	a/+13.45	Apr. 2	a/+15.20

a/ By Salt Lake City Corporation.

b/ By State engineer.

(C-2-1)lab. John L. Barr (C. S. Walters, tenant).--Continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 15, 1935	a/+15.20	Apr. 13, 1936	+16.15	Aug. 25, 1936	a/+13.35
June 18	a/+12.60	May 4	a/+15.10	Sept. 28	a/+13.95
July 12	a/+10.40	27	a/+13.10	Oct. 2	+14.25
Aug. 28	a/+11.70	June 6	+14.65	10	a/+14.55
Nov. 12	a/+14.80	17	a/+13.15	Nov. 24	a/+16.20
Feb. 19, 1936	a/+15.65	July 23	+12.60	Dec. 9	a/+16.30
27	+16.10	Aug. 3	a/+12.65	15	a/+16.70
Mar. 19	a/+16.35				

(C-2-1)15ab. J. D. Gordon, Taylorsville, Salt Lake County. Diameter 3 inches, depth 163 feet. Measuring point, top of casing, 0.2 foot below land surface and 4,331.58 feet above sea level. Field no. 132; Salt Lake City Corporation no. 1291.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1931	-44.22	July 9, 1932	-50.73	Aug. 6, 1934	-54.97
21	-44.45	Aug. 10	-48.89	Oct. 30	-55.58
Oct. 7	-44.98	Sept. 7	-47.87	May 15, 1935	a/-57.70
Nov. 10	-45.96	Oct. 5	-47.71	Oct. 7	a/-57.71
Jan. 8, 1932	-48.42	Nov. 3	-48.00	25	-57.50
Feb. 12	-49.33	Dec. 6	-48.85	Feb. 27, 1936	-58.37
Mar. 11	-50.27	Mar. 17, 1933	-51.50	Apr. 13	-58.78
Apr. 13	-51.39	Apr. 20	-52.72	June 6	-57.91
May 14	-52.14	May 16	-53.00	July 23	-56.87
June 11	-51.65	June 20	-52.09	Oct. 2	-55.00

(C-2-1)22bd. Walter A. Diamond, Taylorsville, Salt Lake County. Diameter 2 inches, depth 324 feet. Measuring point, top of casing, 0.6 foot below land surface and 4,435.2 feet above sea level. The measuring point as given on page 245, Water-Supply Paper 777, should be corrected to read "Top of broken pump base at surface; 4,435.77 feet above mean sea level, United State Geological Survey datum." Field no. 57; Salt Lake City Corporation no. 1292.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 27, 1936	-86.39	June 6, 1936	-86.05	Oct. 2, 1936	-81.50
Apr. 13	-86.80	July 23	-84.16	Dec. 7	-80.88

(C-2-1)24ad. J. D. Blain, Midvale, Salt Lake County. Diameter 2 inches, depth 160 feet. Measuring point, top of casing, 0.5 foot above land surface and 4,344.35 feet above sea level. Field no. 19; Salt Lake City Corporation no. 1257.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 20, 1931	-21.55	Apr. 14, 1932	-24.55	July 21, 1932	-21.91
Sept. 11	-22.10	21	-24.50	28	-21.78
Oct. 15	-22.52	28	-24.54	Aug. 4	-21.75
Nov. 5	-22.74	May 5	-24.59	11	-21.78
Dec. 8	-23.12	12	-24.56	18	-21.89
Jan. 6, 1932	-23.39	19	-24.20	25	-21.92
Feb. 16	-23.72	26	-23.86	Sept. 1	-21.82
25	-23.94	June 2	-23.61	8	-21.90
Mar. 3	-23.97	9	-23.22	15	-22.02
10	-24.12	16	-23.19	22	-22.07
17	-24.21	23	-22.90	29	-22.10
24	-24.27	30	-22.71	Oct. 6	-22.08
31	-24.36	July 7	-22.50	13	-22.08
Apr. 7	-24.34	14	-22.10	20	-22.17

a/ By Salt Lake City Corporation.

(C-2-1)24ad. J. D. Blain---continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 27, 1932	-22.28	Mar. 16, 1933	-24.12	Oct. 7, 1933	-23.27
Nov. 2	-22.41	23	-24.18	May 15, 1934	-25.06
10	-22.55	30	-24.30	Oct. 31	-25.89
17	-22.69	Apr. 6	-24.47	May 10, 1935	a/-27.29
Dec. 1	-22.91	13	-24.65	June 17	a/-26.46
8	-23.01	20	-24.71	Aug. 24	a/-25.73
15	-23.22	27	-24.83	Oct. 10	a/-26.34
22	-23.30	May 4	-24.68	29	-26.37
29	-23.35	11	-24.55	Nov. 19	-26.63
Jan. 5, 1933	-23.51	18	-24.62	Dec. 13	a/-26.80
12	-23.66	25	-24.59	Feb. 11, 1936	a/-27.36
26	-23.83	June 1	-24.42	27	-27.19
Feb. 2	-23.64	8	-24.21	Mar. 16	a/-27.57
9	-24.05	15	-23.87	Apr. 13	-27.72
16	-24.14	29	-23.27	June 6	-26.30
23	-24.23	July 13	-22.70	July 23	-24.94
Mar. 2	-24.28	Aug. 3	-22.30	Oct. 2	-24.47
9	-24.17	17	-22.28	Dec. 7	-24.75

(C-2-1)24cc. Mrs. Anna Larson, Midvale, Salt Lake County. Diameter 3 inches, depth 153 feet. Measuring point, top of casing, 0.75 foot above land surface and 4,287.68 feet above sea level. Field no. 21; Salt Lake City Corporation no. 1259.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 20, 1931	-2.30	Aug. 8, 1932	-2.28	Nov. 19, 1935	-3.64
Sept. 10	-2.65	Sept. 6	-2.36	Feb. 27, 1936	-3.42
Oct. 15	-2.50	Oct. 3	-2.41	Mar. 16	a/-3.75
Nov. 5	-2.65	Nov. 1	-2.46	Apr. 10	a/-3.74
Dec. 8	-2.79	Dec. 9	-2.66	13	-3.70
Jan. 6, 1932	-2.74	Jan. 5, 1933	-2.75	May 29	a/-3.20
Feb. 16	-2.74	Mar. 14	-2.77	June 6	-3.05
Mar. 5	-2.89	May 15	-2.97	26	a/-2.85
Apr. 18	-3.15	May 15, 1934	-3.17	July 23	-2.74
May 7	-3.24	Oct. 31	-3.38	Aug. 7	a/-2.77
June 7	-2.33	May 10, 1935	a/-3.80	Oct. 2	-2.75
July 7	-2.29	Oct. 29	-3.57	Dec. 7	-2.93

(C-2-1)36ab. Agnes B. Jenkins, Midvale, Salt Lake County. Diameter 3 inches, depth 192 feet. Measuring point, top of casing, 0.5 foot above land surface and 4,375.93 feet above sea level. Field no. 22; Salt Lake City Corporation no. 1260.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 20, 1931	-65.25	July 21, 1932	-66.34	Dec. 21, 1933	-67.78
Sept. 10	-66.05	Aug. 8	-66.16	May 15, 1934	-68.18
Oct. 15	-66.42	Sept. 6	-66.17	Oct. 31	-68.55
Nov. 6	-66.53	Oct. 3	-66.13	May 10, 1935	a/-69.64
Dec. 8	-66.77	Nov. 1	-66.29	Oct. 29	-69.22
Jan. 6, 1932	-67.06	Dec. 9	-66.70	Nov. 19	-69.56
Feb. 16	-67.28	Jan. 5, 1933	-67.04	Feb. 27, 1936	-69.88
Mar. 5	-67.41	Mar. 14	-67.43	Apr. 13	-70.20
Apr. 18	-67.65	May 15	-67.93	June 6	-69.75
May 9	-68.06	June 15	-67.54	Dec. 7	-67.30
June 7	-67.09	Aug. 17	-66.40		

(C-2-2)8ad. Hercules Powder Co., Bacchus, Salt Lake County. Diameter 16 inches, depth 500 feet. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: June 6, 1936, 110.25 feet.

a/ By Salt Lake City Corporation.

(C-2-2)9c. Hercules Powder Co., Bacchus, Salt Lake County. Diameter 10 inches, depth 526 feet. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: June 6, 1936, 106.20 feet.

(C-2-4)2ab1. Byron N. Griffith, Lake Point, Tooele County. Diameter 3 inches, depth 240 feet. Measuring point, top of ell, 0.4 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 26, 1936	+7.6	June 13, 1936	+4.13	Sept. 18, 1936	+6.65
Apr. 13	+7.55	July 28	+6.0	Nov. 11	a/+4.55

(C-2-4)2ab2. Mrs. Lola Jackson, Lake Point, Tooele County. Diameter 2 inches, depth 179 feet. Measuring point, top of tee, at land surface. Found flowing prior to all measurements. Pressure head, Oct. 25, 1935, 0.86 foot; Nov. 17, 0.79 foot; Feb. 26, 1936, 0.80 foot; Sept. 18, 1.03 feet.

(C-2-4)17da. E. J. Jeremy, Erda, Tooele County. Measuring point, top of $1\frac{1}{2}$ -inch outlet pipe, 1.5 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 25, 1935	+21.75	Apr. 13, 1936	+21.7	Sept. 18, 1936	+21.0
Nov. 17	+21.5	June 13	+21.2	Nov. 11	+21.1
Feb. 26, 1936	+21.75	July 28	+21.1		

(C-2-4)28db. M. B. Weyland, Erda, Tooele County. Diameter 4 inches, depth 187 feet. Measuring point, top of casing, 0.6 foot below land surface. Pressure head: Oct. 24, 1935, 11.2 feet. Found flowing.

(C-2-4)32bc. Robert Fenton, Erda, Tooele County. Diameter 4 inches, depth 201 feet. Measuring point, top of ell, 2.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	a/+10.7	Apr. 13, 1936	a/+13.4	Sept. 18, 1936	a/+ 9.8
Nov. 17	a/+15.6	June 13	a/+10.2	Nov. 11	+13.15
Feb. 26, 1936	+15.7	July 28	a/+10.2		

(C-2-4)33aa1. Ida L. Clegg, Erda, Tooele County. Diameter $1\frac{1}{2}$ inches. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 17, 1935	-7.70	Apr. 13, 1936	- 7.70	July 28, 1936	-11.07
Feb. 26, 1936	-7.17	June 13	-10.63	Nov. 11	- 9.55

(C-2-4)33aa2. Ida L. Clegg, Erda, Tooele County. Diameter 4 inches. Measuring point, top of $\frac{1}{2}$ -inch hole in plug, 1.3 feet above land surface. Depth to water: July 28, 1936, 14.36 feet; Sept. 18, 14.75 feet; Nov. 11, 12.50 feet.

a/ Found flowing.

(C-2-4)33ab1. L. T. Liddell, Erda, Tooele County. Diameter 3 inches, depth 163 feet. Measuring point, top of tee, 2.5 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 17, 1935	+3.45	June 13, 1936	-0.52	Sept. 18, 1936	-1.45
Apr. 13, 1936	+3.17	July 28	-1.19	Nov. 11	+1.32

(C-2-4)33ab2. L. T. Liddell, Erda, Tooele County. Diameter 1½ inches, depth 80 feet. Measuring point, top of large tee, 2.1 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 25, 1935	a/+4.08	Apr. 13, 1936	+6.4	Sept. 18, 1936	+2.82
Nov. 17	+5.8	June 13	+3.55	Nov. 11	+4.9
Feb. 26, 1936	+7.35	July 28	+3.12		

(C-2-5)7ac1. Western Pacific R.R., Burmester, Tooele County. Diameter 3 inches. Measuring point, top of casing, 1.0 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	+6.9	Apr. 13, 1936	+7.7	Sept. 18, 1936	+7.5
Nov. 17	+7.55	June 13	+7.75	Nov. 11	+7.65
Feb. 26, 1936	+7.75	July 28	+7.8		

(C-2-5)7ac2. Western Pacific R.R., Burmester, Tooele County. Diameter 3 inches. Measuring point, top of 4-inch casing, 1.0 foot above land surface. Pressure head: Sept. 18, 1936, 3.93 feet (found flowing).

(C-2-5)25aa. State of Utah, Erda, Tooele County. Diameter 2 inches. Measuring point, top of casing, 1.4 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	+10.2	Apr. 13, 1936	+10.4	Sept. 18, 1936	+ 9.95
Nov. 17	+10.4	June 13	+10.1	Nov. 11	+10.0
Feb. 26, 1936	+10.4	July 28	+10.2		

(C-2-5)32da. Allen Frazer, Grantsville, Tooele County. Diameter 2 inches, depth 300 feet. Measuring point, top of tee, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	a/+8.0	Apr. 13, 1936	+8.4	Sept. 18, 1936	+8.15
Nov. 17	+8.4	June 13	a/+8.2	Nov. 11	+8.0
Feb. 26, 1936	+8.3	July 28	a/+7.8		

(C-2-5)34aa. Phoebe Nation, Grantsville, Tooele County. Diameter 3 inches. Measuring point, top of casing, 1.0 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	-1.76	Apr. 13, 1936	-1.80	Sept. 18, 1936	-1.44
Nov. 17	-1.97	June 13	-1.15	Nov. 11	-1.29
Feb. 26, 1936	-1.94	July 28	-1.35		

a/ Found flowing.

(C-2-6)25cd1. J. Reuben Clark, Jr., Grantsville, Tooele County. Diameter 6 inches, depth 118 feet. Measuring point, top of outlet pipe, at surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 17, 1935	+ 9.8	June 13, 1936	+11.15	Sept. 18, 1936	+ 9.8
Feb. 26, 1936	+10.75	July 28	a/+ 8.35	Nov. 11	+ 9.85
Apr. 13	+10.85				

(C-2-6)25cd2. J. Reuben Clark, Jr., Grantsville, Tooele County. Diameter 6 inches, depth 114 feet. Measuring point, top of ell, 1.1 feet above land surface. Pressure head: Nov. 17, 1935, 8.9 feet, well leaking on outside of casing.

(C-2-6)36ba. J. Reuben Clark, Jr., Grantsville, Tooele County. Diameter 3 inches, depth 85 feet. Measuring point, top of ell, 2.1 feet above land surface. Found flowing prior to all measurements. Well closed 10 minutes before taking pressure until Apr. 13, 1936; thereafter well closed 20 minutes before taking pressure.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 24, 1935	+1.38	Apr. 13, 1936	+2.15	Sept. 18, 1936	+1.08
Nov. 17	+1.31	June 13	+2.95	Nov. 11	+1.28
Feb. 26, 1936	+2.26	July 28	+0.81		

(C-3-1)14bd. B. H. Beckstead, Riverton, Salt Lake County. Diameter 3 inches, depth 175 feet. Measuring point, top of casing, 0.5 foot above land surface and 4,401.61 feet above sea level. Field no. 88; Salt Lake City Corporation no. 1297.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 21, 1931	- 4.97	Sept. 10, 1932	- 7.85	Oct. 31, 1934	-14.03
Oct. 16	- 5.51	Oct. 4	- 7.81	May 15, 1935	b/-16.78
Nov. 9	- 6.01	Nov. 2	- 7.92	June 17	b/-16.10
Dec. 9	- 6.76	Dec. 6	- 8.62	Oct. 7	b/-17.12
Jan. 8, 1932	- 7.68	Jan. 9, 1933	- 9.18	25	-17.45
Feb. 19	- 8.58	Mar. 17	-10.39	Feb. 27, 1936	-18.67
Mar. 14	- 9.14	Apr. 13	-11.21	Apr. 13	-19.24
Apr. 22	- 9.93	May 16	-11.39	June 6	-17.60
May 17	-10.10	June 20	-10.60	July 23	-17.22
June 11	- 9.59	Oct. 10	- 9.70	Oct. 2	-15.87
July 11	- 8.89	May 29, 1934	-12.65	Dec. 7	-16.10
Aug. 10	- 8.15				

(C-3-1)15bd. Catherine Holt, Redwood Station, Salt Lake County. Diameter 3 inches, depth 250 feet. Measuring point, top of casing, 0.3 foot above land surface and 4,461.04 feet above sea level. Owner reports depth to water was 75 feet in 1900. Field no. 131; Salt Lake City Corporation no. 1294.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1931	-50.65	July 11, 1932	-57.43	May 29, 1934	-61.17
21	-50.82	Aug. 10	-56.42	Oct. 31	-63.60
Oct. 16	-51.56	Sept. 10	-55.78	May 15, 1935	b/-66.96
Nov. 10	-52.19	Oct. 4	-55.73	Oct. 7	b/-67.41
Dec. 9	-53.17	Nov. 2	-55.43	25	-67.65
Jan. 8, 1932	-54.54	Dec. 6	-56.27	Feb. 27, 1936	-69.53
Feb. 19	-55.83	Jan. 9, 1933	-56.94	Apr. 13	-69.85
Mar. 14	-56.33	Mar. 17	-58.66	June 6	-69.40
Apr. 23	-57.89	Apr. 20	-59.80	July 23	-68.40
May 17	-58.23	May 16	-60.01	Oct. 2	-67.10
June 11	-58.24	June 20	-59.85	Dec. 7	-67.80

b/ By Salt Lake City Corporation.

(C-3-1)25aa. Sproul Bros., Draper, Salt Lake County. Diameter 3 inches, depth 135 feet. Measuring point, top of casing, 0.5 foot above land surface. Field no. 34; Salt Lake City Corporation no. 1321.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 24, 1931	-28.25	Nov. 2, 1932	-29.73	Aug. 24, 1935	a/-36.84
Sept. 11	-28.45	Dec. 9	-30.05	Oct. 10	a/-37.18
Oct. 16	-28.92	Jan. 6, 1933	-30.65	23	-37.38
Nov. 9	-29.07	Mar. 6	-31.59	Nov. 13	a/-37.44
Dec. 9	-29.20	Apr. 13	-32.02	19	-37.48
Jan. 7, 1932	-29.02	May 15	-32.25	Jan. 22, 1936	-38.18
Feb. 17	-30.43	June 15	-32.23	Feb. 11	a/-38.28
Mar. 14	-30.67	Oct. 10	-31.19	27	-38.49
Apr. 20	-30.88	Jan. 4, 1934	-32.48	Mar. 16	a/-38.67
May 9	-31.42	May 29	-33.80	Apr. 13	-38.87
June 8	-31.17	Oct. 31	-34.80	June 6	-38.79
July 20	-30.44	May 17, 1935	a/-36.65	Aug. 20	-38.08
Aug. 9	-30.03	June 24	a/-36.73	Sept. 28	-37.98
Sept. 9	-29.70	July 13	a/-36.85	Dec. 7	-38.00
Oct. 3	-29.60	Aug. 13	-36.82		

(C-3-1)26db. Clover Leaf Dairy, Riverton, Salt Lake County. Diameter 3 inches. Measuring point, top of coupling, 3.0 feet above land surface and 4,336.24 feet above sea level. Found flowing prior to all measurements before 1936. Well closed during all of 1936. Field no. 31; Salt Lake City Corporation no. 1322.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 11, 1931	+19.25	Sept. 9, 1932	+19.33	May 17, 1935	a/+15.70
Oct. 16	+18.45	Oct. 4	+19.11	July 13	a/+15.80
Nov. 9	+19.04	Nov. 2	+18.82	Aug. 24	a/+15.95
Dec. 9	+18.31	Dec. 7	+18.53	Oct. 10	a/+14.60
Jan. 8, 1932	+18.03	Jan. 6, 1933	+18.17	23	+15.00
Feb. 18	+18.03	Mar. 7	+17.38	Nov. 13	a/+15.30
Mar. 14	+17.74	May 15	+17.02	Feb. 27, 1936	+15.40
Apr. 20	+17.45	June 15	+17.74	Apr. 13	+15.05
May 9	+17.10	Oct. 10	+17.88	June 6	+15.50
June 8	+17.88	Jan. 4, 1934	+17.17	July 23	+15.80
July 11	+18.68	May 29	+16.87	Oct. 2	+16.75
Aug. 9	+18.89	Oct. 31	+17.30	Dec. 7	+16.45

(C-3-1)27cd. J. R. Dansie, et al., Riverton, Salt Lake County. Diameter 3 inches, depth 220 feet. Measuring point, top of casing, 1.0 foot above land surface and 4,435.24 feet above sea level. Field no. 123; Salt Lake City Corporation no. 1295.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1931	-18.50	Aug. 9, 1932	-23.48	Oct. 31, 1934	-35.02
21	-18.71	Sept. 9	-22.51	May 15, 1935	a/-39.13
Oct. 16	-20.32	Oct. 4	-23.06	June 17	a/-39.28
Nov. 9	-21.77	Nov. 2	-23.70	Oct. 7	a/-38.65
Dec. 9	-23.53	Dec. 6	-25.48	25	-39.10
Jan. 8, 1932	-25.18	Jan. 7	-27.04	Feb. 27, 1936	-41.28
Feb. 19	-27.06	Mar. 15	-30.00	Apr. 13	-41.91
Mar. 12	-28.05	Apr. 20	-31.19	June 6	-40.45
Apr. 22	-29.57	May 15	-31.70	July 23	-38.22
May 17	-30.29	June 20	-30.09	Oct. 2	-35.82
June 8	-28.65	Oct. 10	-27.30	Dec. 7	-36.36
July 11	-25.92	May 29, 1934	-33.10		

(C-3-3)20ba. International Smelting Co., Tooele, Tooele County. Diameter 8 inches, depth 150 feet. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Nov. 17, 1935, 36.01 feet.

a/ By Salt Lake City Corporation.

(C-4-1)35ab. James Gough, Jordan Narrows, Utah County. Diameter 4 inches, depth 200 feet. Measuring point, top of coupling, at land surface. Depth to water: Sept. 18, 1935, 0.31 foot.

(C-5-1)12ba1. Salt Lake City Corporation, Lehi, Utah County. Diameter 2 inches, depth 70-90 feet. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: Sept. 18, 1935, 15.0 feet. Well found capped with concrete in 1936. Salt Lake City Well 46-U.

(C-5-1)12ba2. Salt Lake City Corporation, Lehi, Utah County. Diameter 2 inches, depth 70-90 feet. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: Sept. 11, 1936, 17.9 feet. Ground surface about 1.2 feet lower than at (C-5-1)12ba1. Salt Lake City Well 45U.

(C-5-1)12dc. Naomi P. Fox, Lehi, Utah County. Diameter 5 inches, depth 133 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	a/+10.45	Sept. 14, 1936	a/+14.5	Sept. 24, 1936	+15.7
Sept. 1, 1936	+15.4	15	a/+14.25	26	+15.9
5	+15.6	17	a/+13.85	28	+16.3
10	+16.0	19	a/+13.8	30	+16.8
12	+16.0	21	+14.7	Dec. 23	+20.1

(C-5-1)13aa. Blanch E. Evans, Lehi, Utah County. Diameter 2 inches, depth 100 feet. Measuring point, top of casing, at land surface. Pressure head: Sept. 17, 1935, 8.40 feet; Sept. 11, 1936, 12.25 feet.

(C-5-1)13dd1. Delbert Norman, Lehi, Utah County. Diameter 5 inches, depth 148 feet. Measuring point, top of ell, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	a/+ 9.5	Sept. 10, 1936	+13.1	Sept. 21, 1936	+10.85
Oct. 23	+13.25	12	+13.25	24	+11.5
July 18, 1936	a/+ 9.9	14	+11.8	26	+12.4
Aug. 9	+12.1	15	+11.1	28	a/+12.2
Sept. 2	+11.2	17	+10.9	30	+13.95
5	+12.1	19	+10.75	Dec. 24	+19.5

(C-5-1)13dd2. Bank of American Fork, Lehi, Utah County. Diameter 2 inches, depth 165 feet. Measuring point, top of ell, 1.25 feet above land surface. Pressure head: Sept. 17, 1935, 8.75 feet; Oct. 23, 1935, 12.50 feet.

(C-5-5)2bc. Alma N. Young, Stockton, Tooele County. Diameter 60 inches, depth 34 feet. Measuring point, top of 4-inch x 6-inch plank, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	-26.02	June 13, 1936	-26.72	Sept. 18, 1936	-26.95
Feb. 6, 1936	-26.01	July 28	-25.90	Nov. 12	-25.94
Apr. 14	-26.83				

a/ Found flowing.

(C-5-5)30cb. Drought Relief Administration, no. 3, St. Johns, Tooele County. Diameter 8 inches, depth 107 feet. Measuring point, top of casing, 12.0 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	-11.99	June 13, 1936	-10.07	Sept. 18, 1936	-11.23
Feb. 6, 1936	-10.92	July 28	-10.56	Nov. 12	-11.35
Apr. 14	-10.24				

(C-5-6)25aa. Drought Relief Administration, no. 1, St. Johns, Tooele County. Diameter 8 inches, depth 108 feet. Measuring point, top of casing, 1.5 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	-21.27	June 13, 1936	-18.78	Sept. 18, 1936	-22.08
Feb. 6, 1936	-16.45	July 28	-20.59	Nov. 12	-21.15
Apr. 14	-10.99				

(C-5-6)36cd1. Drought Relief Administration, Clover, Tooele County. Diameter 12 $\frac{1}{2}$ inches, depth 370 feet. Measuring point, top of 12 $\frac{1}{2}$ -inch casing, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	-19.34	June 13, 1936	-17.72	Sept. 18, 1936	-17.93
Feb. 6, 1936	-18.53	July 28	-17.75	Nov. 12	-17.11
Apr. 14	-18.07				

(C-5-6)36cd2. Drought Relief Administration, Clover, Tooele County. Diameter 15 $\frac{1}{2}$ inches, depth 80 feet. Measuring point, top of 12 $\frac{1}{2}$ -inch casing, 2.0 feet above land surface. This is the same as well (C-5-6)36cd1, but is the water surface between the inside and outside well casing.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	-16.68	Apr. 14, 1936	-12.91	July 28, 1936	-14.60
Feb. 6, 1936	-15.42	June 13	-14.30	Nov. 12	-15.17

(C-6-2)29cc. Ernest Carson, Fairfield, Utah County. Diameter 4 inches. Measuring point, top of coupling, 0.2 foot above land surface. Depth to water: June 21, 1936, 0.20 foot.

(C-6-2)29cd. Fairfield Cemetery, Fairfield, Utah County. Diameter 2 inches. Measuring point, top of ell, 0.3 foot above land surface. Depth to water: June 21, 1936, 0.05 foot.

(C-6-2)29dc. McKinney estate, Fairfield, Utah County. Diameter 3 inches. Measuring point, top of ell, 2.2 feet above land surface. Pressure head: June 21, 1936, 2.30 feet (found flowing); Sept. 21, 1936, 2.73 feet (found flowing).

(C-6-2)30dd. Ernest Carson, Fairfield, Utah County. Diameter 3 inches, depth 60 feet. Measuring point, top of casing, at land surface. Well used by Manning Gold Mining Co. Depth to water: Oct. 22, 1935, 2.05 feet.

(C-6-2)32ab. Ellen M. Carson, Fairfield, Utah County. Diameter 2 inches, depth 666 feet. Measuring point, top of tee, 2.8 feet above land surface. Pressure head: Oct. 22, 1935, 16.2 feet (found flowing); June 21, 1936, 14.0 feet (found flowing); Sept. 21, 1936, 16.1 feet (found flowing).

(C-6-2)32bal. William C. Thomas, Fairfield, Utah County. Diameter $2\frac{1}{2}$ inches. Measuring point, top of casing, 0.3 foot above surface. Pressure head: June 21, 1936, 0.22 foot; Sept. 21, 1936, 0.66 foot.

(C-6-2)32ba2. Fred Carson, Fairfield, Utah County. Diameter 2 inches. Measuring point, top of 1-inch tee, 1.7 feet above land surface. Depth to water: June 21, 1936, 1.41 feet; Sept. 21, 1936, 1.30 feet.

(C-7-5)29dc. Amos Davis, Faust, Tooele County. Diameter 2 inches, depth 260 feet. Measuring point, top of spike in south side of willow tree at S.W. corner of house, 1.0 foot above land surface. Pressure head: Sept. 18, 1936, 22.0 feet; Nov. 12, 1936, 22.0 feet.

(C-8-5)31ab. Peter Hansen, Vernon, Tooele County. Diameter 2 inches, depth 265 feet. Measuring point, top of tee, 2.1 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	+20.2	June 13, 1936	+21.1	Sept. 18, 1936	+20.85
Feb. 6, 1936	+22.05	July 28	+20.95	Nov. 12	+20.9
Apr. 14	+22.30				

(C-8-6)26aa. J. Ernest Olson, Vernon, Tooele County. Diameter 2 inches, depth 224 feet. Measuring point, top of tee, 4.0 feet above land surface. Found flowing prior to all measurements except on Nov. 12, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 23, 1935	+13.0	June 13, 1936	+29.0	Sept. 18, 1936	+13.5
Feb. 6, 1936	+14.4	July 28	+27.25	Nov. 12	+26.1
Apr. 14	+14.35				

(C-9-1)26dc. R. C. Lewis, Goshen, Utah County. Diameter $2\frac{1}{2}$ inches, depth 60 feet. Measuring point, top of casing, 1.2 feet above land surface. Found flowing prior to all measurements. Pressure head, June 20, 1936, 2.62 feet; Aug. 8, 2.68 feet; Oct. 3, 2.69 feet; Nov. 30, 2.90 feet.

(C-9-1)35ca. Well in corral, 0.1 mile west of road, Goshen, Utah County. Diameter $1\frac{1}{2}$ inches. Measuring point, top of ell, 0.8 foot above land surface. Pressure head: May 1, 1936, 1.50 feet (found flowing).

(C-9-5)6bc. Drought Relief Administration, Vernon, Tooele County. Diameter $15\frac{1}{2}$ inches, depth 75 feet. Measuring point, top of casing, at land surface. Depth to water: Sept. 18, 1936, 18.17 feet; Nov. 12, 1936, 17.73 feet.

(C-12-1)24ddl. Lavern Bowles, Nephi, Juab County. Diameter $1\frac{1}{2}$ inches, depth 150 feet. Measuring point, top of tee, 0.7 foot above land surface. Pressure head: Nov. 20, 1935, 3.44 feet.

(C-12-1)24dd2. Lavern Bowles, Nephi, Juab County. Diameter 1 inch. Measuring point, top of ell, 2.2 feet above land surface. Pressure head: Nov. 20, 1935, 2.13 feet (found flowing).

(C-12-1)36dcl. Orson Cazier, Nephi, Juab County. Diameter 6 inches, depth 180 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	-46.47	Mar. 4, 1936	-46.20	Aug. 8, 1936	-45.04
31	-46.65	May 1	-44.81	Oct. 3	-45.22
Oct. 8	-46.98	June 20	-44.51	Nov. 30	a/-41.8
Nov. 20	-46.88				

a/ Water dripping into well.

(C-14-1)27cc. Federal Land Bank, Juab, Juab County. Diameter 6 inches, depth 90+ feet. Measuring point, top of casing, 1.1 feet above land surface. Depth to water: Oct. 3, 1936, 69.84 feet; Nov. 30, 1936, 69.95 feet.

(C-14-5)36cc. Federal Land Bank, Leamington, Juab County. Diameter 4 inches, depth 212 feet. Measuring point, top of casing, 0.7 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 19, 1935	-93.70	June 13, 1936	-93.44	Sept. 19, 1936	-93.42
Feb. 6, 1936	-93.79	July 29	-93.34	Nov. 12	-93.57
Apr. 14	-93.76				

(C-15-1)12aa. Drought Relief Administration, Levan, Juab County. Diameter 6 inches, depth 117 feet. Measuring point, top of casing, 1.5 feet above land surface. Tenant, R. C. Mangelson.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 8, 1935	-62.60	Jan. 23, 1936	-62.97	Aug. 8, 1936	-62.88
Sept. 20	-62.70	Mar. 4	-63.10	Oct. 3	-62.80
Oct. 8	-62.72	May 1	-63.05	Nov. 30	-62.42
Nov. 20	-62.84	June 20	-68.66		

(C-15-1)16cb. Juab Lake Irrigation Co., Juab, Juab County. Diameter 12 inches, depth 250 feet. Measuring point, top of casing, 0.3 foot above land surface. Pressure head: Oct. 8, 1935, 2.03 feet (found flowing); Oct. 3, 1936, 2.30 feet (found flowing).

(C-15-1)16cc. Juab Lake Irrigation Co., Juab, Juab County. Diameter 12 inches, depth 252 feet. Measuring point, top of casing, 0.1 foot above land surface. Pressure head: Oct. 8, 1935, 1.95 feet; Oct. 3, 1936, 2.05 feet. Found flowing prior to measurements.

(C-15-4)9dc. Carl F. Olson, Leamington, Millard County. Diameter 36 inches, depth 35 feet. Measuring point, bottom of pump base, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 19, 1935	-33.73	June 13, 1936	-33.48	Sept. 19, 1936	-32.41
Feb. 6, 1936	-35.18	July 29	-33.22	Nov. 12	-33.23
Apr. 14	-33.92				

(C-15-4)20dc. Spencer Nielsen, Leamington, Millard County. Diameter 3 inches, depth 186 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 19, 1935	-125.36	June 13, 1936	-125.47	Sept. 19, 1936	-125.51
Feb. 6, 1936	-124.	July 29	-125.52	Nov. 12	-125.64
Apr. 14	-124.70				

(C-15-5)1aa. I. Parnell Hinckley, Lynndyl, Millard County. Diameter 3 inches. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Sept. 19, 1936, 101.40 feet; Nov. 12, 1936, 101.50 feet.

(C-15-7)36cb. John Elder, Desert Wells, Millard County. Diameter 2 inches, depth 70 feet. Measuring point, top of ell, 1.0 foot above land surface. Pressure head: Sept. 19, 1936, 8.9 feet (found flowing).

(C-16-7)1dc. W. H. Steiner, Desert Wells, Millard County. Diameter 2 inches, depth 132 feet. Measuring point, top of ell, 0.5 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 18, 1935	+3.75	Apr. 15, 1936	+4.11	Sept. 19, 1936	+3.87
Nov. 29	+3.88	June 14	+4.05	Nov. 13	+3.92
Feb. 5, 1936	+4.17	July 29	+3.94		

(C-16-7)4ab. L. N. Hinckley, Sugarville, Millard County. Diameter $1\frac{1}{4}$ inches, depth 324 feet. Measuring point, top of tee, 3.0 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 18, 1935	+3.51	Apr. 15, 1936	+3.72	Sept. 19, 1936	+3.35
Nov. 29	+3.48	June 14	+3.80	Nov. 13	+3.37
Feb. 5, 1936	+3.70	July 29	+3.56		

(C-16-7)12ab. Norman Dresser, Desert Wells, Millard County. Diameter 2 inches. Measuring point, top of casing, 0.2 foot below land surface. Pressure head: Oct. 18, 1935, 3.50 feet (found flowing).

(C-16-7)13bb. George Finch, Desert Wells, Millard County. Diameter $1\frac{1}{8}$ inches. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: Sept. 19, 1936, 2.27 feet (found flowing).

(C-16-7)14ba. W. J. Strickley, Delta, Millard County. Diameter $1\frac{1}{2}$ inches, depth 360 feet. Measuring point, top of $1\frac{1}{2}$ -inch tee, 2.0 feet above land surface. Pressure head: Sept. 19, 1936, 6.1 feet (found flowing); Nov. 13, 1936, 6.3 feet (found flowing).

(C-16-8)15dc1. Mrs. G. H. Needham, Abraham, Millard County. Diameter $1\frac{1}{4}$ inches, depth 300 feet. Measuring point, top of casing, at land surface. Well is 10 feet south of southeast corner of house.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 18, 1935	-0.11	June 14, 1936	-0.05	Sept. 19, 1936	-0.17
Nov. 29	-0.08	July 29	-0.10	Nov. 13	-0.20
Apr. 15, 1936	+0.01				

(C-16-8)15dc2. Mrs. G. H. Needham, Abraham, Millard County. Diameter $1\frac{1}{4}$ inches, depth 150 feet. Measuring point, top of ell, 0.5 foot below land surface. Pressure head: Oct. 18, 1935, 0.4 foot (found flowing).

(C-16-8)15ddl. Frank Foot, Abraham, Millard County. Diameter $1\frac{1}{4}$ inches, depth 175 feet. Measuring point, top of concrete curb, 1.0 foot above land surface. Depth to water: Sept. 19, 1936, 2.00 feet; Nov. 13, 1936, 2.05 feet.

(C-16-8)15dd2. Frank Foot, Abraham, Millard County. Diameter 2 inches, depth 300+ feet. Measuring point, top of ell, 0.2 foot above land surface. Well is about 60 feet southeast of (C-16-8)15ddl. Pressure head: Nov. 13, 1936, 0.30 foot (found flowing).

(C-16-8)36dc. C. H. Day, Abraham, Millard County. Diameter $1\frac{1}{4}$ inches, depth 130 feet. Measuring point, top of ell, 1.8 feet above land surface. Pressure head: July 29, 1936, 0.15 foot (found flowing); Sept. 19, 1936, 0.16 foot (found flowing).

(C-17-6)7ac. J. U. Rencher, Delta, Millard County. Diameter $1\frac{1}{4}$ inches, depth 580 feet. Measuring point, top of ell, 1.1 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 15, 1936	+5.2	July 29, 1936	+4.95	Nov. 12, 1936	+5.15
June 14	+5.05	Sept. 19	+5.00		

(C-17-6)7db. H. H. Sherwood, Delta, Millard County. Diameter $1\frac{1}{4}$ inches, depth 480 feet. Measuring point, top of concrete curb, 2.5 feet above land surface. Depth to water: Apr. 15, 1936, 3.60 feet; July 29, 3.68 feet; Sept. 19, 3.87 feet; Nov. 13, 3.72 feet.

(C-17-6)26da. Maria K. Many, Delta, Millard County. Diameter 15 inches, depth 42 feet. Measuring point, center of discharge pipe flange, at land surface. Depth to water: Nov. 29, 1935, 20.44 feet.

(C-17-6)33dc. Francis Investment Co., Delta, Millard County. Diameter $1\frac{1}{4}$ inches, depth 217 feet. Measuring point, top of tee, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 17, 1935	+5.25	Apr. 15, 1936	+6.5	Sept. 21, 1936	+4.8
Nov. 29	a/+4.35	June 14	+6.3	Nov. 13	+5.5
Feb. 5, 1936	+5.4	July 29	+5.1		

(C-17-7)12da. James Steele, Pahvant Hotel, Delta, Millard County. Diameter $1\frac{1}{4}$ inches, depth 178 feet. Measuring point, top of casing, 1.2 feet above land surface. Depth to water: April 15, 1936, 14.95 feet.

(C-17-7)19da. Carter, Hinckley, Millard County. Diameter $1\frac{1}{4}$ inches, depth 360 feet. Measuring point, top of ell, 1.1 feet above land surface. Pressure head: July 29, 1936, 2.92 feet (found flowing).

(C-17-7)20cb. Wm. J. Webb, Hinckley, Millard County. Diameter $1\frac{1}{4}$ inches, depth 356 feet. Measuring point, top of concrete trough, 0.6 foot above land surface. Pressure head: July 29, 1936, 4.8 feet (found flowing); Sept. 19, 1936, 4.75 feet (found flowing); Nov. 13, 1936, 4.9 feet (found leaking).

(C-17-7)25da. Investors Finance Co., Delta, Millard County. Diameter $1\frac{1}{4}$ inches. Measuring point, top of ell, 1.0 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 18, 1935	+2.90	Apr. 15, 1936	+3.23	Sept. 20, 1936	+2.93
Nov. 29	+3.12	June 14	+3.11	Nov. 12	+3.27
Feb. 5, 1936	+3.24	July 29	+3.07		

(C-17-7)30aa. John G. Parry, Hinckley, Millard County. Diameter $1\frac{1}{4}$ inches, depth, 200(?) feet. Measuring point, top of ell, 0.6 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 18, 1935	+1.57	Apr. 15, 1936	+1.83	Sept. 20, 1936	+1.58
Nov. 29	+2.06	June 14	+1.75	Nov. 13	+1.70
Feb. 5, 1936	+1.89	July 29	+1.62		

a/ Found flowing.

(C-18-1)13cc1. Arch Mellor, Fayette, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 125 feet. Measuring point, top of casing, at land surface. Pressure head: Oct. 10, 1935, 2.72 feet (found flowing); Nov. 22, 1935, 2.95 feet (found flowing).

(C-18-1)13cc2. Arch Mellor, Fayette, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 90 feet. Measuring point, top of casing, 0.3 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 23, 1936	+4.9	Aug. 8, 1936	+4.65	Nov. 30, 1936	+5.25
June 17	+4.95	Sept. 30	+4.8		

(C-18-1)27db. Drought Relief Administration, Fayette, Sanpete County. Diameter 4 inches, depth 205 feet. Measuring point, top of casing, 0.5 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 15, 1935	a/-0.65	Mar. 4, 1936	-1.21	Aug. 8, 1936	-1.60
Oct. 10	-3.35	Apr. 23	-2.98	Sept. 30	-2.23
Nov. 22	-5.35	June 17	-0.99	Nov. 30	-2.19
Jan. 23, 1936	-6.02				

(C-18-5)6bb. Union Pacific Railroad, Harding, Millard County. Diameter 6-5/8 inches, depth 276 feet. Measuring point, top of concrete platform, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 17, 1935	b/+17.9	Apr. 15, 1936	b/+18.15	Sept. 21, 1936	+27.9
Nov. 29	+28.75	June 14	+28.2	Nov. 13	+28.4
Feb. 5, 1936	+29.9	July 29	+28.1		

(C-18-5)28ac. Lawrence Clarke, McCornick, Millard County. Diameter 6 inches, depth 198 feet. Measuring point, bottom of pump base, 1.1 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 15, 1936	-15.21	July 29, 1936	-15.83	Nov. 13, 1936	-15.91
June 14	-15.45	Sept. 21	-15.62		

(C-18-5)33dd. McCornick Town, McCornick, Millard County. Diameter 6 inches, depth 33 feet. Measuring point, top of coupling, 0.5 foot above land surface. Depth to water: Apr. 15, 1936, 29.75 feet. Well found destroyed in June, 1936.

(C-18-7)5aa. Sarah A. Webb, Deseret, Millard County. Diameter $1\frac{1}{4}$ inches, depth 320 feet. Measuring point, top of ell, 1.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 17, 1935	+5.0	Apr. 15, 1936	c/+4.9	Sept. 20, 1936	c/+4.3
Nov. 29	c/+4.15	June 14	c/+4.5	Nov. 13	c/+4.6
Feb. 5, 1936	c/+4.15	July 29	c/+4.55		

a/ By V. L. Bartholomew.
b/ Found flowing.

c/ Found flowing through hose.

(C-19-1)23bc. C. H. Beal, Gunnison, Sanpete County. Diameter 12 inches, depth 186 feet. Measuring point, bottom of hole in east side of turbine pump, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 5, 1935	-38.08	Mar. 4, 1936	-37.83	Aug. 6, 1936	-37.58
Nov. 23	-37.81	Apr. 23	-37.60	Sept. 30	-37.31
Jan. 6, 1936	-38.00	June 17	-37.40	Nov. 28	-37.09

(C-19-1)23ca. Suye Kimura, Gunnison, Sanpete County. Diameter 8 inches, depth 80 feet. Measuring point, bottom of slot in casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 23, 1935	-26.19	Mar. 4, 1936	-26.62	Aug. 6, 1936	-25.52
Jan. 26, 1936	-26.69	Apr. 23	-26.40	Sept. 30	<u>a/</u>

(C-19-1)25cd1. Wintch & Dyreng, Gunnison, Sanpete County. Diameter 2 inches, depth 30-50 feet. Measuring point, top of union joint, 1.0 foot below land surface. The second from north of 5 wells on north side of road. Pressure head: March 4, 1936, 0.58 foot (found flowing).

(C-19-1)25cd2. Wintch & Dyreng, Gunnison, Sanpete County. Diameter 2 inches, depth 30-50 feet. Measuring point, top of casing, 2.5 feet below land surface. The third from north of 5 wells on north side of road. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 5, 1935	+1.19	Mar. 4, 1936	+1.23	Aug. 6, 1936	+2.70
Oct. 10	+1.20	Apr. 23	+1.72	Sept. 30	+2.56
Nov. 23	+1.41	June 17	+1.87	Nov. 28	+2.65
Jan. 25, 1936	+1.40				

(C-19-1)25cd3. Wintch & Dyreng, Gunnison, Sanpete County. Diameter 2 inches, depth 30-50 feet. Measuring point, top of casing, 2.5 feet below land surface. The second from southeast of 5 wells on north side of road. Pressure head: Mar. 4, 1936, 1.16 feet (found flowing); Sept. 5, 1936, 1.10 feet (found flowing).

(C-19-1)25cd4. Wintch & Dyreng, Gunnison, Sanpete County. Diameter 2 inches, depth 30-50 feet. Measuring point, top of casing, 2.0 feet below land surface. The southeasterly well of 5 wells on the north side of road. Pressure head: Mar. 4, 1936, 1.00 foot (found flowing).

(C-19-4)31bc. Union Pacific Railroad, Greenwood, Millard County. Diameter 6 inches, depth 175 feet. Measuring point, shoulder of iron pump, 0.4 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 15, 1936	-18.17	July 29, 1936	-18.20	Nov. 13, 1936	-18.49
June 14	-17.82	Sept. 21	-18.49		

(C-19-5)4dd. Central Utah Water Co., McCornick, Millard County. Diameter 6 inches. Measuring point, top of coupling, 1.0 foot above land surface. Depth to water: Sept. 21, 1936, 34.33 feet; Nov. 13, 1936, 34.26 feet.

a/ Well plugged by silt from flood waters.

(C-19-5)22da. Utah State Highway Commission, Greenwood, Millard County. Diameter 4 inches. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 29, 1935	-16.20	June 14, 1936	-15.36	Sept. 21, 1936	-16.12
Feb. 5, 1936	-15.91	July 29	-15.81	Nov. 13	-16.05
Apr. 15	-15.67				

(C-19-9)15. Millard County, Clearlake, Millard County. Diameter 4 inches, depth 600 feet. Measuring point, top of casing, at land surface. See U. S. Geol. Survey Water-Supply Paper 277, page 100. Pressure head: Sept. 20, 1936, 1.98 feet (found flowing).

(C-20-5)9ad. Edgar Turner, Pahvant, Millard County. Diameter 5 inches, depth 212 feet. Measuring point, top of casing, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 27, 1935	+7.8	Feb. 5, 1936	+11.0	July 29, 1936	+8.7
Oct. 17	+8.4	Apr. 15	+10.0	Sept. 21	+8.6
Nov. 28	+9.9	June 14	+ 8.9	Nov. 14	+9.6

(C-20-5)9da. Edgar Turner, Pahvant, Millard County. Diameter 6½ inches, depth 350 feet. Measuring point, top of casing, 4.0 feet above land surface. Pressure head: Sept. 21, 1936, 19.3 feet (found flowing). At 45 minutes after closing well, pressure head was 22.3 feet.

(C-20-5)22bc. George Rowley, Pahvant, Millard County. Diameter 6 inches, depth 320(?) feet. Measuring point, top of coupling, at land surface. About 300 feet north of residence. Pressure head: Sept. 21, 1936, 5.7 feet (found flowing); Nov. 14, 1936, 5.7 feet (found flowing).

(C-20-5)27bc. Drought Relief Administration, Pahvant, Millard County. Diameter 12 inches, depth 601 feet. Measuring point, top of casing, at land surface. Along east side of road. Well could not be completely closed and leaked about 2 gallons a minute during all measurements. Pressure head: Oct. 17, 1935, 4.75 feet; Nov. 28, 1935, 5.0 feet; Apr. 15, 1936, 5.4 feet.

(C-21-1)13bd. Federal Land Bank, Salina, Sevier County. Diameter 3 inches, depth 175 feet. Measuring point, top of ell, 2.0 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 23, 1935	+2.10	June 17, 1936	+1.56	Sept. 30, 1936	+3.00
Jan. 26, 1936	+2.13	Aug. 6	+1.34	Nov. 28	+2.90
Apr. 22	+2.57				

(C-21-1)27aa. Rebecca C. Thorsen, Salina, Sevier County. Diameter 3 inches, depth 211 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 6, 1935	-5.94	Jan. 26, 1936 <u>a/</u>	-5.40	Aug. 5, 1936.	-5.28
Sept. 5	-5.98	Apr. 22	-5.15	Sept. 30	-5.11
Oct. 10	-5.93	June 17	-5.20	Nov. 27 <u>a/</u>	-4.93
Nov. 23	-5.68				

a/ Found flowing through buried pipe to corral.

(C-21-5)3bb. Alfred Huntsman, Pahvant, Millard County. Diameter 5 inches. Measuring point, top of coupling, 0.6 foot above land surface. Depth to water: July 29, 1936, 26.13 feet; Sept. 21, 26.34 feet; Nov. 14, 26.29 feet.

(C-21-5)17cc. Harry Johnson, Flowell, Millard County. Diameter 6 $\frac{1}{4}$ inches, depth 347 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 7, 1935	a/+6.8	Nov. 28, 1935	+25.5	July 30, 1936	a/+ 8.7
Sept. 19	a/+6.7	Feb. 5, 1936	+26.8	Sept. 21	a/+ 9.8
26	a/+6.7	Apr. 15	a/+ 9.1	Nov. 14	+27.6
Oct. 17	+22.0	June 14	a/+ 9.2		

(C-21-5)20aa. O. L. Robinson, Flowell, Millard County. Diameter 8 inches. Measuring point, top of casing, at land surface. All measurements, except Sept. 21, 1936, made under the direction of the Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 2, 1928	+18.4	Feb. 2, 1930	+28.8	Jan. 3, 1932	+21.9
May 15, 1929	+12.7	Mar. 2	+28.8	Feb. 3	+22.5
June 21	+11.8	30	+24.2	Mar. 1	+22.5
July 27	+11.8	Sept. 28, 1931	+10.7	30	+22.5
Nov. 4	+23.1	Nov. 3	+19.5	Sept. 21, 1936	+11.1
Jan. 2, 1930	+28.2				

(C-21-5)21ab. State of Utah, Flowell, Millard County. Diameter 6 $\frac{1}{4}$ inches, depth 246 feet. Measuring point, top of coupling, 1.5 feet above land surface. Known as "Bartholomew well." Recording gage operated on this well throughout 1936. See Water-Supply Paper 777, p. 242, for record prior to 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 1, 1936	-16.98	Apr. 20, 1936	-22.36	Sept. 10, 1936	-23.66
15	-16.69	30	-22.90	13	-23.21
31	-16.19	May 10	-23.18	30	-22.84
Feb. 16	-15.90	20	-23.53	Oct. 5	-20.12
Mar. 2	-15.80	31	-23.75	15	-19.05
4	-16.55	June 10	-23.59	31	-18.15
9	-16.50	20	-23.84	Nov. 5	-16.80
11	-17.01	29	-24.07	17	-15.94
20	-17.10	July 15	-23.90	22	-15.19
31	-16.98	31	-24.07	30	-14.80
Apr. 5	-20.95	Aug. 15	-23.87	Dec. 15	-14.06
10	-21.53	31	-23.85	31	-13.16

(C-21-5)33cd. Andrew Dahlquist, Flowell, Millard County. Diameter 8 inches, depth 200 feet. Measuring point, top of check valve opening in pump, 2.0 feet below land surface. Known as Robinson or Davis well.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 26, 1935	-11.75	Feb. 4, 1936	-3.50	July 30, 1936	-10.16
Oct. 16	- 8.62	Apr. 15	-7.83	Sept. 21	- 9.85
Nov. 28	- 5.50	June 14	-9.65	Nov. 14	- 4.40

a/ Found flowing. Found leaking prior to other measurements.

(C-21-5)34bd. R. E. Sweeting, Flowell, Millard County. Diameter 12 inches, depth 175 feet. Measuring point, top of 8-inch casing, 0.3 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 26, 1935	-52.55	Apr. 15, 1936	-48.63	Sept. 21, 1936	-50.75
Nov. 28	-48.28	June 14	-50.37	Nov. 14	-46.47
Feb. 4, 1936	-45.83	July 30	-50.64		

(C-22-1)8bb. A. L. Andersen, Aurora, Sevier County. Diameter 3 inches, depth 164 feet. Measuring point, top of casing, 0.3 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 6, 1935	-33.53	Jan. 26, 1936	-32.66	Aug. 5, 1936	-32.84
Sept. 5	-33.48	Apr. 22	-32.22	Sept. 30	-32.68
Oct. 11	-33.39	June 17	-32.35	Nov. 27	-32.06
Nov. 23	-32.99				

(C-22-5)17bd. Wm. Blake, Meadow, Millard County. Diameter 6 inches, depth 348 feet. Measuring point, top of west flange of tee joint, 2.5 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 7, 1935	a/+13.1	Feb. 4, 1936	+22.5	July 30, 1936	+14.1
Sept. 18	a/+13.35	Apr. 15	+21.9	Sept. 21	+13.75
Oct. 16	a/+13.2	June 14	a/+13.5	Nov. 14	+22.85
Nov. 28	+20.0				

(C-22-5)18dc. Nolan Jackson, Flowell, Millard County. Diameter 6-7/8 inches, depth 490 feet. Measuring point, top of 4-3/4-inch casing, 0.6 foot above land surface. Pressure head: June 14, 1936, 15.7 feet (found flowing).

(C-22-9)6bc. Dennis Smith, Garrison, Millard County. Diameter 5 1/2 inches, depth 120 feet. Measuring point, top of casing, 0.8 foot above land surface. Depth to water: Oct, 1934, 74 feet (by owner); May 1, 1936, 62 feet (by owner); Nov. 17, 1936, 58.75 feet.

(C-23-2)1ab. W. P. Payne, Sigurd, Sevier County. Diameter 3 inches, depth 80 feet. Measuring point, top of outlet pipe, 0.5 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 7, 1935	+1.28	Jan. 16, 1936	+1.23	Aug. 5, 1936	+2.70
Sept. 6	+1.24	Apr. 22	+1.57	Sept. 30	+2.53
Oct. 11	+1.17	June 17	+2.55	Nov. 27	+2.48
Nov. 23	+1.18				

(C-23-2)15bd. Sevier School District, Venice, Sevier County. Diameter 3 inches, depth 167 feet. Measuring point, top of casing, 0.6 foot below land surface. Found flowing prior to all measurements except Aug. 5, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 27, 1936	+5.25	June 17, 1936	+5.2	Sept. 30, 1936	+5.65
Apr. 22	+5.15	Aug. 5	+5.6	Nov. 26	+6.2

a/ Found flowing. Found leaking prior to other measurements.

(C-23-2)15dc1. F. M. Jackson, Venice, Sevier County. Diameter 2 inches, depth 75 feet. Measuring point, top of casing, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June, 1930	a/+2.5	Nov. 23, 1935	+5.4	Aug. 5, 1936	+3.70
Aug. 7, 1935	+2.56	Jan. 26, 1936	+6.4	Sept. 30	+3.38
Sept. 6	+3.07	Apr. 22	+3.52	Nov. 26	+5.7
Oct. 11	+3.10	June 17	+2.88		

(C-23-2)15dc2. I. W. Oldroyd, Venice, Sevier County. Diameter 3 inches, depth 90 feet. Measuring point, top of casing, 0.2 foot below land surface. Pressure head: June, 1930, 3.0 feet (by Utah State Agricultural Experiment Station); Nov. 23, 1935, 5.0 feet.

(C-23-2)15dc3. I. W. Oldroyd, Venice, Sevier County. Diameter 2 inches, depth 96 feet. Measuring point, top of casing, 0.8 foot above land surface. Pressure head: June, 1930, 2.4 feet (by Utah State Agricultural Experiment Station); Nov. 23, 1935, 4.9 feet.

(C-23-2)19da. Wm. Hallows, Richfield, Sevier County. Diameter 2 inches, depth 310 feet. Measuring point, top of outlet pipe, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 6, 1935	+8.0	Jan. 26, 1936	+8.3	Sept. 30, 1936	+12.6
Oct. 11	+8.7	Apr. 22	+8.7		

(C-23-2)26cd. Netti C. Johnson, Glenwood, Sevier County. Diameter 4 inches, depth 63 feet. Measuring point, top of casing, 0.7 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 11, 1935	b/+3.83	Apr. 22, 1936	b/+5.0	Sept. 30, 1936	b/+4.50
Nov. 23	b/+4.70	June 17	b/+4.2	Nov. 26	+5.45
Jan. 26, 1936	+5.85	Aug. 5	b/+4.35		

(C-23-2)27bd. Archie L. Buchanan, Venice, Sevier County. Diameter 2 inches. Measuring point, top of ell, 1.7 feet above land surface. Pressure head: Sept. 30, 1936, 2.25 feet (found flowing); Nov. 26, 1936, 3.22 feet (found flowing).

(C-23-2)31dc. Pacific National Life Insurance Co., Richfield, Sevier County. Diameter 2 inches, depth 225 feet. Measuring point, top of ell, 1.0 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 12, 1935	+4.15	Apr. 20, 1936	+3.82	Sept. 30, 1936	+4.65
Nov. 23	+4.20	June 17	+4.12	Nov. 26	+5.2
Jan. 26, 1936	+4.18	Aug. 5	+4.6		

a/ By Utah State Agricultural Experiment Station.

b/ Found flowing.

(C-24-2)7bal. R. & J. A. Hooper, Annabella, Sevier County. Diameter 4 inches, depth 68 feet. Measuring point, top of casing, 1.6 feet below land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 12, 1935	+0.22	Apr. 20, 1936	+0.57	Sept. 30, 1936	+0.65
Nov. 23	+0.86	June 17	+0.30	Nov. 26	+1.45
Jan. 26, 1936	+0.90	Aug. 5	+0.65		

(C-24-2)7ba2. R. & J. A. Hooper, Annabella, Sevier County. Diameter 3 inches, depth 131 feet. Measuring point, top of casing, 1.6 feet below land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 12, 1935	+1.38	Apr. 20, 1936	+0.96	Sept. 30, 1936	+1.85
Nov. 23	+1.54	June 17	+1.31	Nov. 26	+2.32
Jan. 26, 1936	+1.34	Aug. 5	+1.73		

(C-24-3)33dc. Huetta M. Willardson, Monroe, Sevier County. Diameter 42 inches, depth 40 feet. Measuring point, top of concrete curb, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 12, 1935	-23.67	Apr. 20, 1936	-25.56	Sept. 30, 1936	a/-25.2
Nov. 24	-23.19	June 17	a/-28.7	Nov. 26	-21.14
Jan. 26, 1936	-24.10	Aug. 5	a/-26.2		

(C-24-3)34ca. John Barney, Austin, Sevier County. Diameter 1½ inches. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Nov. 24, 1935, 19.05 feet.

(C-25-3)3bb. Luther Winget, Austin, Sevier County. Diameter 1½ inches. Measuring point, top of pump valve seat, 1.0 foot above land surface. Depth to water: Sept. 30, 1936, 18.44 feet; Nov. 26, 1936, 17.79 feet.

(C-25-4)11cd. Geo. Bradbury, Joseph, Sevier County. Diameter 6 inches, depth 135 feet. Measuring point, top of casing, 3.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 7, 1935	-29.94	Jan. 26, 1936	-29.69	Aug. 5, 1936	-30.08
Oct. 12	-29.85	Apr. 20	-30.11	Sept. 30	-29.90
Nov. 24	-29.73	June 17	-30.20	Nov. 26	-29.73

(C-26-1)13ca. C. E. Burr, Burrville, Sevier County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, at land surface. Pressure head: Sept. 29, 1936, 2.77 feet (found flowing).

(C-26-1)23da. A. E. DeLange, Koosharem, Sevier County. Diameter 2 inches, depth 75 feet. Measuring point, top of ell, 1.5 feet above land surface. Pressure head: Sept. 29, 1936, 12.0 feet (found flowing); Nov. 27, 1936, 12.4 feet (found flowing).

a/ Pumping from well.

(C-26-1)25ac. Arnol R. Brown, Koosharem, Sevier County. Diameter 2 inches, depth 127 feet. Measuring point, top of ell, 1.2 feet above surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 11, 1935	+16.9	Apr. 22, 1936	+15.9	Sept. 29, 1936	+16.3
Nov. 23	+15.6	Aug. 5	+15.9	Nov. 27	+16.6

(C-26-1)35ad. Otto Erickson, Koosharem, Sevier County. Diameter 2 inches, depth 156 feet. Measuring point, top of casing, 1.6 feet above land surface. Pressure head: Sept. 29, 1936, 5.95 feet (found flowing).

(C-26-1)35db. Orson H. Andersen, Koosharem, Sevier County. Diameter 1½ inches, depth 232 feet. Measuring point, top of south arm of tee, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 11, 1935	+12.1	Apr. 22, 1936	+11.9	Sept. 29, 1936	+12.85
Nov. 23	+11.65	Aug. 5	+12.6	Nov. 27	+12.8

(C-26-7)26a. Drought Relief Administration, Sulphurdale, Beaver County. Diameter 6 inches, depth 250 feet. Measuring point, top of casing, 0.4 foot above land surface. Depth to water: Apr. 15, 1936, more than 200 feet, reported to be 230 feet.

(C-26-10)18aa. John C. Murdock, Opal, Beaver County. Diameter 1½ inches. Measuring point, top of casing, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 16, 1936	+3.30	July 31, 1936	+3.11	Nov. 15, 1936	+3.20
June 15	+3.22	Sept. 22	+3.11		

(C-26-10)32cd1. Burton Smithson, Milford, Beaver County. Diameter 48 inches, depth 19 feet. Measuring point, top of platform, at land surface. Depth to water: Sept. 22, 1936, 14.71 feet; Nov. 15, 1936, 12.62 feet.

(C-26-10)32cd2. Burton Smithson, Milford, Beaver County. Diameter 1½ inches. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: Sept. 22, 1936, 3.2 feet (found flowing); Nov. 15, 1936, 4.0 feet (found flowing).

(C-26-16)19bb. Dearden & Wood, Pine Valley, Beaver County. Diameter 4 inches, depth 393 feet. Measuring point, top of coupling, 1.0 foot above land surface. Depth to water reported to be 355 feet, Nov. 16, 1936.

(C-27-10)21ab. Public Land, Opal, Beaver County. Diameter 10 inches, depth 67 feet. Measuring point, top of casing, at land surface. Depth to water, June 15, 1936, 55.20 feet; July 31, 55.36 feet; Sept. 22, 55.29 feet; Nov. 15, 54.92 feet.

(C-28-3)6ad. John R. Pearson, Marysville, Piute County. Diameter 24 inches, depth 50 feet. Measuring point, top of 2- by 12-inch plank, 0.2 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 7, 1935	-23.86	Apr. 20, 1936	-26.25	Sept. 28, 1936	-15.08
Oct. 12	-23.65	June 17	-16.52	Nov. 26	-17.30
Jan. 27, 1936	-26.41	Aug. 4	-14.02		

(C-28-7)21da. C. T. Baldwin, Manderfield, Beaver County. Diameter 48 inches, depth 30 feet. Measuring point, top of 2- x 12-inch plank, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-25.03	Feb. 4, 1936	-25.91	July 30, 1936	-19.27
Oct. 16	-25.16	Apr. 15	-25.90	Sept. 21	-22.50
Nov. 24	-25.59	June 14	-16.00	Nov. 14	-23.80

(C-28-10)7aa. Milford Town, Milford, Beaver County. Diameter 10 inches, depth 465 feet. Measuring point, bottom of I-beam supporting pump, 1.6 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	-10.63	Feb. 3, 1936 a/-	1.18	July 31, 1936	- 8.57
Oct. 15	- 7.25	Apr. 16	- 9.27	Sept. 22	- 7.87
Nov. 27	- 2.77	June 15	b/-14.66	Nov. 15	- 2.78

(C-28-10)19aa1. C. W. Eiler, Milford, Beaver County. Diameter 8 inches, depth 14 feet. Measuring point, bottom of pump base, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. 4, 1936	-11.55	June 15, 1936	-13.36	Sept. 22, 1936	-15.00
Apr. 16	-10.61	July 31	-14.10	Nov. 18	c/

(C-28-10)19aa2. C. W. Eiler, Milford, Beaver County. Diameter 8 inches, depth 10½ feet. Measuring point, top of casing, 0.3 foot above land surface. Located in corral. All measurements by the Utah State Agricultural Experiment Station except Feb. 3, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 27, 1932	- 7.5	Dec. 5, 1932	- 9.5	Aug. 3, 1933 ?	- 9.3
July 6	- 8.8	Jan. 4, 1933	- 9.1	Apr. 8, 1934	- 8.4
Aug. 3	- 9.7	Mar. 1	- 8.5	May 10	- 8.9
Sept. 3	-10.2	Apr. 1	- 8.0	Feb. 10, 1935	- 9.9
Oct. 2	-10.7	May 4	- 7.8	Mar. 17	- 9.5
30	-10.2			Feb. 3, 1936	d/

(C-28-10)19ab. Ezra Walker, Milford, Beaver County. Diameter 2 inches, depth 260 feet. Measuring point, top of 4-inch casing, 0.8 foot above land surface. Pressure head: Nov. 18, 1936, 2.48 feet (found flowing).

(C-28-10)19ad. C. W. Eiler, Milford, Beaver County. Diameter 14 inches, depth 54 feet. Measuring point, top of casing, 10 feet below land surface. Depth to water: Nov. 18, 1936, 3.17 feet; Dec. 24, 1936, 2.38 feet.

(C-28-10)19dc. C. G. Haskell, Milford, Beaver County. Diameter 16 inches, depth 109 feet. Measuring point, top of casing, 12 feet below land surface. Depth to water: Feb. 4, 1936, 0.51 foot.

a/ Found flowing from lower pit outlet.

b/ Recently pumped.

c/ Well found destroyed.

d/ Dry at -10.5 feet.

(C-28-10)20cc. R. W. Jones, Milford, Beaver County. Diameter 14 inches, depth 42 feet. Measuring point, top of casing, 12 feet below land surface. Measurements prior to 1936 made by the Utah State Agricultural Experiment Station (Haskell well).

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
1924	+6.0	Sept. 4, 1932	-5.9	Mar. 1, 1933	-1.6
1930	+2.0	Oct. 2	-4.9	Apr. 1	-1.1
Mar. 27, 1932	-0.9	30	-3.8	May 4	-1.5
Apr. 22	-1.7	Dec. 5	-2.9	Apr. 8, 1934	-1.7
July 6	-5.3	Jan. 4, 1933	-2.3	May 10	-4.8
Aug. 3	-5.4	Feb. 1	-2.0	Mar. 17, 1935	-2.5
				Sept. 23, 1936 ^a /	-17.65

(C-28-10)30ac. State of Utah, Milford, Beaver County. Diameter 16 inches, depth 85 feet. Measuring point, top of plank over pit, at land surface. Recording gage operated on this well since Nov. 28, 1935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 27, 1935	-18.14	May 28, 1936	-18.44	Aug. 19, 1936	-23.51
Dec. 15	-17.54	30	-18.25	23	-23.62
31	-16.94	31	-22.75	26	-18.53
Jan. 15, 1936	-16.54	June 12	-23.92	30	-24.22
31	-16.17	15	-19.60	Sept. 1	-23.89
Feb. 15	-15.81	22	-18.65	4	-19.63
29	-15.56	27	-19.58	10	-19.40
Mar. 15	-15.33	30	-23.90	17	-18.77
31	-14.86	July 2	-24.32	30	-18.44
Apr. 13	-14.69	6	-19.74	Oct. 7	-17.90
22	-15.85	14	-19.81	11	-18.25
30	-15.69	15	-23.62	14	-18.31
May 4	-15.77	20	-19.92	20	-17.76
8	-18.25	24	-20.03	31	-17.29
12	-19.28	26	-24.06	Nov. 15	-16.86
13	-22.00	31	-24.76	30	-16.50
15	-19.47	Aug. 4	-18.63	Dec. 10	-16.25
22	-19.06	10	-18.15	20	-15.95
24	-23.65	15	-18.26	29	-15.16

(C-28-10)30bd. Addison Bybee, Milford, Beaver County. Diameter 16 inches, depth 58 feet. Measuring point, top of curb, 0.5 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
1920 ^b /	-10.0	Mar. 17, 1935 ^c /	-15.6	Feb. 3, 1936	-16.79
Mar. 27, 1932 ^c /	-13.0	Nov. 28	-18.76	Sept. 22	-19.49

(C-28-10)31ad. Frank W. Gosplll, Milford, Beaver County. Diameter 14 inches, depth 76 feet. Measuring point, top of concrete curb, at land surface. Measurements during 1932, 1933, 1934, and 1935 made by the Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. --, 1925 ^d /	-13.0	Jan. 31, 1933	-19.1	Mar. 17, 1935	-20.6
Nov. --, 1929 ^d /	-21.0	Mar. 1	-18.7	Feb. 3, 1936	-21.60
Mar. 27, 1932	-17.3	Apr. 1	-18.2	Apr. 16	-20.73
Apr. 21	-18.3	May 4	-18.6	June 15	-28.13
Oct. 2	-23.5	Mar. 11, 1934	-19.5	July 31	-27.98
Oct. 30	-21.3	Apr. 8	-18.8	Sept. 22	-27.00
Dec. 5	-20.2	Jan. 10, 1935	-21.4	Nov. 18	-21.92
Jan. 5, 1933	-19.3				

^a/ Pumping from well.

^b/ Reported depth to water when drilled.

^c/ By Utah State Agricultural Experiment Station.

^d/ Reported by owner.

(C-28-10)31cc. Carl A. Rohn, Milford, Beaver County. Diameter 12 inches, depth 84 feet. Measuring point, top of curb, at land surface. Depth to water: Feb. 3, 1936, 25.90 feet.

(C-28-10)31cd1. Eldon M. Cates, Milford, Beaver County. Diameter 14 inches, depth 78 feet. Measuring point, top of 3- by 8-inch upright in northwest corner of pit, at land surface. Depth to water, 1923 (reported by owner), 17.0 feet; Mar. 17, 1935 (by Utah State Agricultural Experiment Station), 25.7 feet; Feb. 4, 1936, 27.03 feet.

(C-28-10)31cd2. Eldon M. Cates, Milford, Beaver County. Diameter 12 inches. Measuring point, top of wooden casing, 0.7 foot above land surface. Measurements by the Utah State Agricultural Experiment Station except Feb. 3, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 27, 1932	-24.3	Dec. 5, 1932	-27.0	Apr. 1, 1933	-25.0
July 6	-32.5	Jan. 5, 1933	-26.2	June 4	-30.7
Oct. 2	-29.3	31	-25.9	Feb. 3, 1936	a/
30	-29.1	Mar. 1	-25.4		

(C-28-10)31dd. Francis Investment Co., Milford, Beaver County. Diameter 14 inches, depth 65 feet. Measuring point, top of 2- by 4-inch collar, at land surface. Known as Oppenheimer well. Measurements prior to September 1935 by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 27, 1932	-25.55	Dec. 5, 1932	-29.05	Apr. 16, 1936	-27.30
Apr. 24	-26.05	Jan. 5, 1933	-27.55	June 15	-33.92
July 6	-30.75	31	-26.85	July 31	-34.40
Aug. 3	-31.65	Mar. 17, 1935	-27.50	Sept. 23	-33.80
Sept. 4	-32.35	Sept. 17	-35.55	Nov. 18	-29.00
Oct. 2	-32.05	Nov. 28	-29.78	Dec. 24	-27.35
30	-30.35	Feb. 3, 1936	-28.09		

(C-28-10)33ab. Duluth Land Co., Milford, Beaver County. Diameter 8 inches, depth 140 feet. Measuring point, top of casing, 3.3 feet below land surface. On demonstration farm.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	-36.03	Feb. 4, 1936	-38.02	Sept. 22, 1936	-28.63
Oct. 15	-36.46	Apr. 16	-38.62	Nov. 18	-27.05
Nov. 27	-35.98	June 15	-36.32	Dec. 8	-28.10
Feb. 3, 1936	-38.00	July 31	-34.30	24	-26.70

(C-28-11)36bb1. D. W. & D. L. Muir, Milford, Beaver County. In corral. Diameter 12 inches. Measuring point, top of curb, 0.5 foot above land surface. Known as Moebius well. Measurements prior to 1936 by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
1929 b/-	6.	Feb. 1, 1933	- 8.4	Mar. 17, 1935	- 8.7
Apr. 22, 1932	- 6.7	Mar. 1	- 8.0	Feb. 3, 1936	- 9.57
July 6	- 8.9	Apr. 1	- 7.5	Apr. 16	- 8.65
Aug. 3	- 9.6	May 4	- 7.3	June 15	-10.33
Sept. 3	-10.9	June 4	- 7.7	July 31	-10.50
Oct. 2	-10.7	Aug. 7	-10.0	Sept. 22	-11.40
30	-10.0	Mar. 11, 1934	- 7.9	Nov. 18	- 9.95
Dec. 5	- 9.1	May 10	- 8.6	Dec. 7	- 9.60
Jan. 4, 1933	- 8.7	Feb. 10, 1935	- 9.1	24	- 9.30

a/ Well plugged.

b/ When drilled.

(C-28-11)36bb2. D. W. & D. L. Muir, Milford, Beaver County. Diameter 12 inches. Measuring point, top of casing, 5.0 feet below land surface. Depth to water: Feb. 3, 1936, 3.80 feet.

(C-29-7)21ba. Drought Relief Administration, Beaver, Beaver County. Diameter 12 inches, depth 415 feet. Measuring point, top of casing, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-14.75	Apr. 15, 1936	-20.61	Sept. 22, 1936	- 4.75
Oct. 15	-17.37	June 14	- 0.73	Nov. 14	-14.77
Nov. 24	-22.34	July 30	- 0.59	Dec. 14	-19.70
Feb. 4, 1936	-25.84				

(C-29-7)28db. J. A. Nower, Beaver, Beaver County. Diameter 3 inches, depth 213 feet. Measuring point, top of reducer, 3.5 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-13.65	Feb. 4, 1936	-16.95	July 30, 1936	-10.57
Oct. 15	-14.98	Apr. 16	-15.59	Sept. 22	-12.30
Nov. 24	-15.93	June 15	- 9.48	Nov. 14	-12.75

(C-29-8)25ca1. Drought Relief Administration, Greenville, Beaver County. About 0.2 mile east of Greenville School house, on south side of road. Diameter 6-5/8 inches, depth 300 feet. Measuring point, top of casing, 0.3 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	+ 8.45	Feb. 2, 1936	+11.4	July 31, 1936	+ 9.75
Oct. 15	+ 8.5	Apr. 16	+11.1	Sept. 22	+ 9.6
Nov. 24	+ 9.6	June 15	+ 8.65	Nov. 15	+ 9.5

(C-29-8)25ca2. Greenville School, Greenville, Beaver County. Diameter 2 inches, depth 290 feet. Measuring point, top of ell, 2.4 feet above land surface. Found flowing prior to all measurements. Pressure head: June 15, 1936, 9.6 feet; July 31, 9.9 feet; Sept. 22, 9.25 feet; Nov. 15, 9.45 feet.

(C-29-8)30ac. Drought Relief Administration, Adamsville, Beaver County. About 75 feet northwest of Ward House. Diameter 6-5/8 inches, depth 119 feet. Measuring point, top of casing, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-23.26	Apr. 16, 1936	-21.86	Sept. 22, 1936	-21.52
Oct. 15	-22.78	June 15	-20.68	Nov. 15	-21.44
Nov. 24	-21.96	July 31	-20.67	Dec. 14	-21.68
Feb. 2, 1936	-22.45				

(C-29-10)6aa. Laura L. Cates, Milford, Beaver County. Diameter 14 inches, depth 95 feet. Measuring point, bottom of 4- by 6-inch beam, 0.5 foot above land surface. Measurements prior to 1936 made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 22, 1932	-28.5	Aug. 3, 1932	-33.4	Oct. 2, 1932	-32.9
July 6	-32.9	Sept. 4	-34.0	30	-31.3

(C-29-10)6aa.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 5, 1932	-30.1	June 4, 1933	-31.1	June 15, 1936	a/-44.0
Jan. 4, 1933	-29.4	Mar. 11, 1934	-28.7	July 31	a/-44.11
31	-29.0	Apr. 8	-28.7	31	b/-37.22
Mar. 1	-28.7	May 10	-31.8	Sept. 22	-35.61
Apr. 1	-28.4	Feb. 3, 1936	-31.22	Nov. 18	-31.88
May 4	-29.9	Apr. 16	-30.43		

(C-29-10)6dd. Duluth Land Co., Milford, Beaver County. Diameter 14 inches, depth 73 feet. Measuring point, top of 2- x 4-inch curb, at land surface. Known as Stewart well. Measurements prior to 1936 made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June, 1921	c/-30.	Mar. 1, 1933	-36.4	Mar. 20, 1935	-38.0
June, 1929	c/-34.	Apr. 1	-36.0	May 5	-38.2
Apr. 22, 1932	-35.5	May 4	-36.3	Feb. 3, 1936	-39.18
July 6	-37.2	June 4	-36.4	Apr. 16	-38.57
Aug. 3	-37.8	Mar. 11, 1934	-36.9	June 15	-40.05
Sept. 4	-38.2	Apr. 8	-36.7	July 31	-40.99
Oct. 2	-38.4	May 10	-37.2	Sept. 23	-40.68
30	-38.0	June 2	-38.5	Nov. 18	-39.80
Dec. 5	-37.2	Jan. 10, 1935	-38.4	Dec. 7	-39.29
Jan. 4, 1933	-36.9	Feb. 10	-38.3	24	-38.78
Feb. 1	-36.6				

(C-29-10)7cd. Francis Investment Co., Milford, Beaver County. Diameter 14 inches. Measuring point, top of casing, 1.5 feet below land surface. Known as Fulton well. Measurements prior to Nov. 28, 1935 made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 27, 1932	-40.5	Mar. 1, 1933	-41.3	May 5, 1935	-42.9
Apr. 22	-41.0	Apr. 1	-41.2	Nov. 28	-44.00
July 6	-41.3	May 4	-41.3	Feb. 3, 1936	-43.85
Aug. 3	-41.5	June 4	-41.4	Apr. 16	-43.57
Sept. 4	-41.8	Mar. 11, 1934	-41.1	June 15	-44.12
Oct. 2	-42.0	May 6	-41.9	July 31	-44.39
30	-42.0	June 2	-42.2	Sept. 23	-44.40
Dec. 5	-41.7	Jan. 10, 1935	-43.2	Nov. 18	-43.93
Jan. 4, 1933	-41.5	Feb. 10	-43.1	Dec. 7	-43.82
Feb. 1	-41.4	Mar. 20	-42.9	24	-43.70

(C-29-10)8ba. Francis Investment Co., Milford, Beaver County. Diameter 4 inches. Measuring point, top of casing, 0.3 foot above land surface. Known as Von Allman well. Measurements by Utah State Agricultural Experiment Station except Nov. 28, 1935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 27, 1932	-38.0	Jan. 31, 1933	-39.0	Mar. 11, 1934	-39.4
Apr. 22	-38.3	Mar. 2	-38.8	Apr. 8	-39.2
Oct. 30	-40.4	Apr. 1	-38.7	Mar. 20, 1935	d/-39.3
Dec. 5	-39.6	May 4	-39.8	Nov. 28	d/-38.8
Jan. 5, 1933	-39.1	June 4	d/-39.8		

a/ Pumping from well.

b/ Pump stopped 15 minutes.

c/ Reported.

d/ Well filled and dry at this depth.

(C-29-11)1ad. Francis Investment Co., Milford, Beaver County. Diameter 48 to 12 inches. Measuring point, top of casing, 17 feet below surface. Known as Hickman well.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	-13.56	Apr. 16, 1936	- 8.41	Sept. 22, 1936	-12.47
Oct. 15	-12.45	June 15	-12.01	Nov. 18	-10.60
Nov. 27	-11.01	July 31	-12.85	Dec. 24	- 9.57
Feb. 3, 1936	- 9.44				

(C-29-11)22dd. P. V. Haworth, Milford, Beaver County. Diameter 14 inches, depth 50 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	-29.27	Apr. 17, 1936	-28.42	Sept. 23, 1936	-29.29
Oct. 16	-28.89	June 15	-29.23	Nov. 18	-28.72
Nov. 26	-28.63	July 31	-29.42	Dec. 24	-28.61
Feb. 3, 1936	-28.52				

(C-29-11)29ad. Public Land, Milford, Beaver County. Diameter 12 inches. Measuring point, bottom of 12- by 12-inch timber, at land surface. Depth to water: Sept. 23, 1936, 15.14 feet.

(C-29-11)29dd. Erletto Investment Co. & Geo. Jefferson, Milford, Beaver County. Diameter 12 inches, depth 41 feet. Measuring point, top of 2- by 4-inch bracing for curb, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	-17.05	Feb. 3, 1936	-16.64	July 31, 1936	-16.80
Oct. 16	-17.10	Apr. 17	-16.38	Sept. 23	-16.09
Nov. 26	-16.98	June 15	-16.72	Nov. 18	a/

(C-29-11)35bc. Public Domain, Milford, Beaver County. Diameter 12 inches. Measuring point, top of casing, 38.0 feet below land surface. Depth to water: Oct. 16, 1935, 6.43 feet; Nov. 26, 6.45 feet; Feb. 3, 1936, 6.36 feet.

(C-30-3)15bb. O. P. Jessen, Kingston, Piute County. Diameter 27 inches, depth 30 feet. Measuring point, top of concrete curb, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1935	-14.40	Apr. 20, 1936	-26.96	Sept. 28, 1936	-15.05
Oct. 12	-16.21	June 17	-12.89	Nov. 26	-21.06
Jan. 27, 1936	-25.30	Aug. 4	-13.34		

(C-30-3)16aa. N. W. Christensen, Kingston, Piute County. Diameter 48 inches, depth 30 feet. Measuring point, top of 4- by 4-inch timber over well, 1.0 foot above land surface. Depth to water: Sept. 9, 1935, 10.85 feet.

(C-30-4)14ad. Grover C. Lewis, 50 feet south of lane and 100 feet east of house, Circleville, Piute County. Diameter 48 inches, depth 23½ feet. Measuring point, top of 6- by 10-inch timber, 0.2 foot above land surface. Depth to water: Sept. 9, 1935, 20.99 feet.

(C-30-4)14dd. Earl Whitaker, Circleville, Piute County. Diameter 2 inches, depth 150 feet. Measuring point, top of plug, 2.0 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1935	+5.75	Apr. 20, 1936	+4.4	Sept. 28, 1936	+5.2
Oct. 12	+6.3	June 17	+5.5	Nov. 26	+4.85
Jan. 27, 1936	+4.95	Aug. 4	+5.3		

(C-30-10)12cd. T. L. Gray, Minersville, Beaver County. Diameter 4 inches, depth 335 feet. Measuring point, top of casing, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-31.89	Apr. 16, 1936	-30.49	Sept. 22, 1936	-30.41
Oct. 15	-35.60	June 15	-30.50	Nov. 15	-29.50
Nov. 27	-30.62	July 31	-30.10	Dec. 15	-29.73
Feb. 4, 1936	-31.42				

(C-30-11)4dc1. Public domain, Milford, Beaver County. Diameter 12 inches, depth 42 feet. Measuring point, top of casing, 2.1 feet below land surface. Depth to water: Oct. 16, 1935, 25.36 feet.

(C-30-11)4dc2. Public domain, immediately west of well (C-30-11) 4dc1, Milford, Beaver County. Diameter 4 inches, depth 33 feet. Measuring point, top of coupling, 0.8 foot above land surface, and 2.93 feet above top of casing of well (C-30-11)4dc1.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 16, 1935	-28.26	Apr. 17, 1936	-28.17	Sept. 23, 1936	-28.28
Nov. 26	-28.25	June 15	-28.25	Nov. 18	-28.16

(C-30-12)11bb. David L. Barnes, Thermo, Beaver County. Diameter 48 inches, depth 34 feet. Measuring point, top of angle iron over well, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 16, 1935	-33.10	Apr. 17, 1936	-32.68	Sept. 23, 1936	-33.02
Nov. 26	-33.11	June 15	-33.00	Nov. 18	-32.96
Feb. 3, 1936	-33.08				

(C-30-12)12bb. Ernest E. Gray, Thermo, Beaver County. Diameter 12 inches, depth 20 feet. Measuring point, top of wooden casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 26, 1935	-17.19	Apr. 17, 1936	-16.68	Sept. 23, 1936	-17.15
Feb. 3, 1936	-16.98	June 15	-17.02	Nov. 18	-16.89

(C-31-13)1ac. Oscar P. Stephenson, Nada, Iron County. Diameter 48 to 15 inches, depth 65 feet. Measuring point, top of platform, 0.3 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 26, 1935	-27.68	June 15, 1936	-27.64	Nov. 18, 1936	-27.69
Apr. 17, 1936	-27.62	Sept. 22	-27.72		

(C-31-13)2lab. Public domain, Latimer, Iron County. Diameter 36 inches, depth 23 feet. Measuring point, top of curb, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 26, 1935	-21.95	June 15, 1936	-22.07	Nov. 18, 1936	-22.09
Apr. 17, 1936	-22.00	Sept. 23	-22.00		

(C-31-13)22dc. Alvin L. Couch, Latimer, Iron County. Diameter 48 inches, depth 37 feet. Measuring point, top of curb, at land surface. Depth to water: Nov. 26, 1935, 35.18 feet; Sept. 23, 1936, 35.17 feet; Nov. 18, 1936, 35.20 feet.

(C-32-8)35bb. H. N. Edwards, about 350 feet east of highway, Paragonah, Iron County. Diameter 3 inches, depth 400+ feet. Measuring point, top of ell, 0.5 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1935	+5.9	Feb. 2, 1936	+7.4	July 31, 1936	+4.95
Oct. 15	+5.3	Apr. 18	+7.3	Sept. 25	+4.95
Nov. 24	+5.45	June 16	+5.25	Nov. 21	+5.0

(C-32-14)21bc. Union Pacific Railroad, Lund, Iron County. Diameter 12 inches, depth 585 feet. Measuring point, top of casing, 0.5 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	-2.84	Jan. 30, 1936	-2.88	Aug. 1, 1936 ^a	-4.03
Oct. 14	-2.85	Apr. 17	-2.76	Sept. 23	-3.53
Nov. 26	-2.86	June 15	-2.80		

(C-33-5)16cd. W. C. Tebbs, Panguitch, Garfield County. Diameter 24 inches, depth 17.5 feet. Measuring point, top of 2- by 6-inch timber, 2.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1935	-14.68	Apr. 20, 1936	-15.87	Sept. 28, 1936	-15.97
Oct. 12	-14.78	June 17	-15.07	Nov. 26	-16.30
Jan. 27, 1936	-15.77	Aug. 4	-15.39		

(C-33-9)11aa. Lenora Stubbs, Parowan, Iron County. Diameter 3 inches, depth 350 feet. Measuring point, top of casing, 1.0 foot above land surface. Pressure head: Nov. 21, 1936, 6.9 feet (found flowing).

^a/ First pumping from well for 5 or 6 years was 7 hours on July 27, 28 and 29, 1936.

(C-33-9)11ac1. Witte & Ayres, Paragonah, Iron County. Diameter 3 inches, depth 325 feet. Measuring point, top of casing, 0.7 foot above land surface. The northeasterly one of two wells. Pressure head: Nov. 21, 1936, 7.2 feet (found flowing).

(C-33-9)11ac2. Witte & Ayres, 60 feet southwest of well (C-33-9) 11ac1, Paragonah, Iron County. Diameter 3 inches, depth 280 feet. Measuring point, top of casing. Pressure head: Nov. 21, 1936, 4.5 feet (found flowing).

(C-33-9)34cb1. Mary B. Marsden, Parowan, Iron County. Diameter $4\frac{1}{2}$ inches, depth 500 feet. Measuring point, top of casing, 1.0 foot above land surface. This well formerly flowed. A pumped well, (C-33-9)34cb2, is about 3 feet west of this well.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1935	a/-55.45	Jan. 31, 1936	-22.88	Aug. 1, 1936	a/-51.57
Oct. 15	a/-45.32	Apr. 18	a/-35.94	Sept. 25	-44.61
Nov. 24	-30.68	June 16	a/-54.67	Nov. 21	-29.94

(C-33-9)34dc. Federal Land Bank, Parowan, Iron County. Diameter 60 inches, depth 50? feet. Measuring point, top of concrete curb, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1935	-24.03	Jan. 31, 1936	-11.43	Aug. 1, 1936	-22.03
Oct. 15	-20.77	Apr. 18	-12.02	Sept. 25	-23.89
Nov. 24	-13.73	June 16	-21.84	Nov. 21	-13.72

(C-33-9)36dc. Hugh L. Adams, Parowan, Iron County. Diameter $4\frac{1}{2}$ inches, depth 499 feet. Measuring point, top of concrete curb, at land surface. Measurements prior to 1936 made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Feb. --, 1925	b/-32	Nov. --, 1934	-46.8	Oct. 22, 1935	-48.3
May 31, 1933	c/-69.3	Dec. 19	-45.3	Nov. 18	-47.3
July 8	c/-69.8	Jan. 29, 1935	-50.8	Dec. 20	-46.8
Aug. 25	c/-70.1	Feb. --	-49.8	Jan. 31, 1936	-45.83
Sept. 28	c/-70.5	Mar. 14	-44.3	Apr. 18	c/-72.0
Dec. 28	c/-70.5	Apr. 22	-44.8	June 16	c/-72.9
Jan. --, 1934	c/-70.3	May 31	c/-73.	Aug. 1	c/-72.0
May --	c/-64.8	June 24	c/-72.	Sept. 25	c/-67.15
July 18	c/-68.8	July 19	c/-72.	Nov. 21	-46.67
Oct. 31	-46.8	Aug. 31	c/-73.		

(C-33-13)32ca. Union Pacific Railroad, Avon, Iron County. Diameter 6 inches, depth 93 feet. Measuring point, top of pump rod collar, 4.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 30, 1936	d/-47.57	June 15, 1936	d/-48.42	Sept. 23, 1936	d/-48.74
Apr. 17	d/-48.00	Aug. 1	d/-48.48	Nov. 19	d/-48.92

(C-33-15)31cb. Jesse C. Carlson, Beryl, Iron County. Diameter 8 inches, depth 53 feet. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Sept. 23, 1936, 28.02 feet; Nov. 19, 1936, 28.05 feet.

a/ Pumping from adjacent well.
b/ Reported by driller.
c/ Pumping from well.

d/ The water is suspected to be held up by the hand pump cylinder, and probably this is not the true static level.

(C-33-16)19dd. Clarence Lynd, Beryl, Iron County. Diameter 60 inches, depth 68 feet. Measuring point, bottom of 2- by 6-inch timber, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 26, 1935	-66.66	Apr. 17, 1936	-66.78	Sept. 24, 1936	-66.65
Jan. 30, 1936	-66.80	Aug. 2	-66.77	Nov. 18	-66.86

(C-33-16)32ab. Union Pacific Railroad, Beryl, Iron County. Diameter 13 inches, depth 208 feet. Measuring point, top of 2- by 8-inch collar at entry to well pit, 3.5 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	-18.97	June 17, 1936	-18.99	Sept. 23, 1936	-19.15
Oct. 14	-18.94	Aug. 2	-19.21	Nov. 18	-19.07
Jan. 30, 1936	-18.98				

(C-33-17)29dc. Frank G. Webster, Beryl, Iron County. Diameter 8 inches, depth 128 feet. Measuring point, top of casing, 0.7 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	-108.20	Jan. 30, 1936	-108.15	Sept. 24, 1936	-108.17
Oct. 14	-108.13	Apr. 17	-108.14	Nov. 18	-108.21
Nov. 26	-108.22	June 16	-108.21		

(C-34-5)8ad1. J. O. Beckstrom, Panguitch, Garfield County. Diameter 5 inches, depth 93 feet. Measuring point, top of casing, 4.7 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1935	- 8.92	Apr. 20, 1936	-12.82	Sept. 28, 1936	-13.03
Oct. 12	-10.59	June 17	- 9.87	Nov. 26	-14.95
Jan. 27, 1936	-14.09	Aug. 4	-10.01		

(C-34-5)8ad2. J. O. Beckstrom, Panguitch, Garfield County. Diameter 6 inches, depth 120 feet. Measuring point, top of coupling, 5.5 feet below land surface. This well is in pit under back porch and is about 4 feet north of well (C-34-5)8ad1. Depth to water: Sept. 28, 1936, 12.32 feet.

(C-34-5)28db. Reed Hayward, Panguitch, Garfield County. Diameter 36 inches, depth 20 feet. Measuring point, top of curb, 4.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Apr. 20, 1936	-22.89	Aug. 4, 1936	-10.74	Nov. 26, 1936	-18.29
June 17	-14.68	Sept. 28	-13.55		

(C-34-8)5bb. Drought Relief Administration, Paragonah, Iron County. Diameter 12 inches, depth 420 feet. Measuring point, top of casing, 1.0 foot above land surface. Drilled for Paragonah Canal Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1935	-28.44	Feb. 2, 1936	-28.41	Aug. 1, 1936	-28.84
Oct. 15	-28.88	Apr. 18	-27.45	Sept. 25	-29.40
Nov. 24	-29.22	June 16	-27.77	Nov. 21	-29.95

(C-34-9)9bb1. Horace Evans, Parowan, Iron County. Diameter 60 to 2 inches, depth 350- feet. Measuring point, top of concrete curb, at land surface. A concrete-lined sump 52 feet deep with 3 small (2-inch?) wells in bottom driven to a maximum depth of 350 feet. See U. S. Geological Survey Water-Supply Paper 277, p. 141, "Wells of Frank Culver". Depth to water: Aug. 1, 1936, 42.8 feet (pumping from sump).

(C-34-9)9bb2. Horace Evans, Parowan, Iron County. The center one of three wells immediately west of well (C-34-9)9bb1. Diameter 3 inches, depth 200+ feet. Measuring point, top of casing, 1.1 feet above land surface. Depth to water: Aug. 1, 1936 (pumping from adjacent pit, (C-34-9)9bb1), 21.91 feet; Sept. 25, 8.15 feet; Nov. 21, 3.92 feet.

(C-34-9)9bb3. Horace Evans, Parowan, Iron County, about 90 feet north of well (C-34-9)9bb2, in southeast side of pond. Diameter 2 inches. Measuring point, top of casing, at land surface. Depth to water: Sept. 25, 1936, 8.16 feet.

(C-34-9)9bb4. Horace Evans, Parowan, Iron County, about 120 feet northeast of well (C-34-9)9bb1, in ditch. Diameter 2 inches. Measuring point, top of casing, at land surface. Depth to water: Apr. 18, 1936, 17.08 feet; Sept. 25, 8.70 feet; Nov. 21, 3.20 feet.

(C-34-9)9bb5. Horace Evans, about 325 feet northeast of well (C-34-9)9bb1, 100 feet north of house, in ditch, Parowan, Iron County. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Aug. 1, 1936, 9.85 feet; Sept. 25, 6.10 feet; Nov. 21, 2.75 feet.

(C-34-9)9bb6. Horace Evans, in corral, about 300 feet northeast of ranch house, Parowan, Iron County. Diameter 3 inches, depth 550 feet. Measuring point, top of casing, at land surface. Depth to water: Sept. 25, 1936, 5.45 feet; Nov. 21, 1936, 1.83 feet.

(C-34-10)13ca. Harry J. Doolittle, Summit, Iron County. Diameter 60 to 16 inches, depth 107 feet. Measuring point, bottom of 1- by 4-inch board in concrete curb, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 16, 1935	-38.09	Apr. 18, 1936	-37.90	Sept. 25, 1936	- 6.67
Oct. 15	-38.17	June 16	-38.24	Nov. 21	- 9.65
Nov. 24	-38.22	Aug. 1	-11.73		

(C-34-13)6b. Georgia N. Bate, Avon, Iron County. Diameter 6 inches. Measuring point, top of casing, 1.8 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 30, 1936	-69.54	Aug. 1, 1936	-69.52	Nov. 19, 1936	-69.53
June 15	-69.48	Sept. 23	-69.54		

(C-34-15)1aa. Bank of Southern Utah (Table Buttes), Iron County. Diameter 1½ inches, depth 160 feet. Measuring point, top of 2- by 12-inch plank at southeast corner of trough, 1.0 foot above land surface. Known as Webster well. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	+1.90	Jan. 30, 1936	+1.94	Sept. 23, 1936	+1.73
Oct. 14	+1.82	Apr. 17	+1.98	Nov. 19	+1.80
Nov. 26	+1.87	June 15	+1.88		

(C-34-16)28bc. Fred Fisher, Beryl, Iron County. Diameter 12 inches, depth 67 feet. Measuring point, top of casing, 7.0 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	-1.85	Jan. 30, 1936	-1.56	Aug. 2, 1936	-1.82
Oct. 14	-1.79	Apr. 17	-1.38	Sept. 24	-1.86
Nov. 25	-1.75	June 15	-1.59	Nov. 19	-1.67

(C-35-10)7ca. Jos. M. Jones, Enoch, Iron County. Diameter 8 inches, depth 100 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 15, 1935	a/-31.63	Nov. 25, 1935	a/-31.62	Apr. 18, 1936	-31.40
Oct. 14	a/-31.70	Jan. 31, 1936	-31.60	June 16	b/

(C-35-11)9cc. John C. Heaton, Cedar City, Iron County. Diameter 2 inches, depth 90 feet. Measuring point, top of casing, 1.0 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 15, 1935	a/-16.06	Apr. 18, 1936	- 8.82	Nov. 23, 1936	- 9.15
Oct. 14	-12.79	June 16	a/-17.35	Dec. 8	- 8.76
Nov. 25	- 8.00	Aug. 1	-12.92	22	- 8.45
Jan. 31, 1936	- 6.78	Sept. 25	-13.61		

(C-35-11)12cb. Wm. H. Grimshaw, Enoch, Iron County. Diameter 2 inches, depth 208 feet. Measuring point, top of casing, 1.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1936	-0.90	Nov. 23, 1936	-0.50	Dec. 22, 1936	-0.61
Sept. 25	-2.07	Dec. 8	-0.58		

(C-35-11)21cd1. A. Frank Walker, Cedar City, Iron County. Diameter 12 inches, depth 173 feet. Measuring point, center of air gage, 1.0 foot above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 1, 1931	c/-51	Feb. 18, 1932	-25	May 27, 1932	-22
Nov. 5	-25	Mar. 31	-23	June 23	-22
Dec. 5	-26	Apr. 23	-23	Sept. 30	-24
Jan. 8, 1932	-25				

(C-35-11)21cd2. A. Frank Walker, about 25 feet north of well (C-35-11)21cd1, Cedar City, Iron County. Diameter 8 inches, depth 75 feet. Measuring point, top of casing, 1.3 feet above land surface. Depth to water: Sept. 26, 1936, 45.48 feet, pumping from well (C-35-11)21cd1.

a/ Pumping from adjacent well.

b/ Pump installed on well, cannot measure.

c/ Pumping from well.

(C-35-11)21dc. Wilford Fife, Cedar City, Iron County. Diameter 12 inches. Measuring point, top of casing, at land surface. All measurements prior to 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 1, 1931	a/-58	Dec. 27, 1932	-16 ?	Dec. 20, 1934	-24
Nov. 5	-23	Jan. --, 1933	-16 ?	Jan. 28, 1935	-23
Dec. 5	-23	Feb. 27	-21.7	Feb. --	-23
Jan. 8, 1932	-23	Apr. 28	-22.5	May 31	-47
Feb. 18	-23	May 31	a/-43	June 29	-59
Mar. 31	-24	July 8	a/-43	Jan. 29, 1936	-29.90
Apr. 23	-22	Sept. 28	a/-42	Apr. 18	-28.97
May 27	a/-44	Dec. 28	-18	June 16	-34.74
June 23	a/-44	Jan. --, 1934	-18	Aug. 2	a/-49.70
July 28	a/-54	May --	a/-49	Sept. 25	-35.81
Aug. 29	a/-48	July 13	a/-56	Nov. 23	-33.08
Sept. 30	a/-45	Oct. 25	-26	Dec. 8	-33.39
Oct. 28	-17 ?	Nov. --	-26	22	-32.28
Nov. 30	-18 ?				

(C-35-11)27ac. Fernleigh Gardner, Cedar City, Iron County. Diameter 12 inches, depth 114 feet. Measuring point, top of casing, at land surface. Measurements prior to Sept. 26, 1936 are air-gage readings made by Utah State Agricultural Experiment Station until June 5, 1936 and by the owner from June 10 to Aug. 5, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1931	a/-40	July 8, 1933	a/-38	Oct. 31, 1935	-43
Nov. 2	-35	Aug. 25	a/-39	Nov. 26	-43
Dec. 3	-34	Sept. 28	a/-39	Dec. 20	-42
Jan. 7, 1932	-34	Dec. 28	-34	Jan. 29, 1936	-39
Feb. 5	-33	Jan. --, 1934	-33	Apr. 4	a/-44
Mar. 25	-32	May --	a/-41	May 1	-39
May 25	a/-37	July 13	a/-42	28	-40
June 23	a/-36	Oct. 31	a/-43	28	a/-46
July 28	a/-36	Nov. --	a/-43	June 5	a/-47
Aug. 29	a/-38	Dec. 8	-39	10	a/-51
Sept. 30	a/-38	Jan. 29, 1935	-39	11	a/-55
Oct. 28	-32	Feb.	-39	July 1	a/-56
Nov. 28	-31	Mar. 14	-39	10	a/-57
Dec. 27	-31	Apr. 22	-39	Aug. 5	a/-58
Jan. --, 1933	-31	May 31	-39	Sept. 26	-46.55
Feb. 27	-30	June 29	-39	Nov. 22	-44.57
Mar. 30	-31	July 20	-39	Dec. 8	-44.22
Apr. 28	a/-37	Aug. 31	a/-49	22	-44.04
May 31	-32				

(C-35-11)27db. Lorenzo F. Luke, Cedar City, Iron County. Diameter 12 inches, depth 93 feet. Measuring point, center of air gage, 1.0 foot above land surface. Measurements prior to 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 3, 1931	a/-42	Feb. 5, 1932	-33	June 23, 1932	a/-38
Nov. 2	a/-43	Mar. 25	-32	July 28	a/-38
Dec. 3	-33	Apr. 18	-31	Sept. 26, 1936	a,b/-63.0
Jan. 7, 1932	-33	May 25	a/-40		

a/ Pumping from well.

b/ Measuring point is top of casing, at surface.

(C-35-11)28aa. Ether Perry & Bros., Cedar City, Iron County. Diameter 12 inches. Measuring point, center of air gage, 2.0 feet above land surface. Measurements are air-gage readings and, except Jan. 29, 1936, were made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 1, 1931	a/-39	Dec. 27, 1932	-26	Dec. 20, 1934	-35
Nov. 5	-28	Jan. --, 1933	-26	Jan. 28, 1935	-34
Dec. 5	-28	Feb. 27	-26	Feb. --	-34
Jan. 8, 1932	-28	Mar. 30	-26	Mar. 18	-32
Feb. 18	-28	Apr. 28	a/-37	Apr. 22	-32
Mar. 31	-26	May 31	a/-37	May 31	a/-44
Apr. 23	a/-37	July 8	a/-37	June 29	a/-44
May 27	a/-36	Sept. 28	-28	July 27	a/-45
June 23	a/-36	Dec. 28	-28	Aug. 30	a/-46
July 28	a/-37	Jan. --, 1934	-27	Oct. 31	a/-47
Aug. 29	a/-37	May --	a/-39	Dec. 3	-36
Sept. 30	-27	July 13	a/-43	Jan. 29, 1936	-35
Oct. 28	-27	Oct. 25	a/-44	Apr. 4	a/-43
Nov. 30	-26	Nov. --	a/-44	May 29	-36

(C-35-11)29ad. Kumen L. Jones, Cedar City, Iron County. Diameter 12 inches, depth 110 feet. Measuring point, top of casing, 1.0 foot above land surface. All measurements, except Sept. 26, 1936, are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 1, 1931	a/-53	Jan. --, 1933	-17	Jan. 28, 1935	-34
Nov. 10	a/-53	Feb. 27	-17	Feb. --	-34
Dec. 4	-19	Mar. 30	-16	Mar. 16	-34
Jan. 8, 1932	-19	Apr. 28	-17	Apr. 22	-34
Feb. 9	-19	May 31	a/-52	May 31	-34
Mar. 31	-17	July 8	a/-53	June 24	-36
Apr. 22	-17	Aug. 25	a/-52	July 27	a/-55
May 26	a/-50	Sept. 28	a/-51	Aug. 30	a/-55
June 23	a/-51	Dec. 28	-28	Oct. 31	a/-56
July 28	a/-52	Jan. --, 1934	-28	Dec. 3	-36
Aug. 29	a/-53	May --	a/-51	Jan. 28, 1936	-35
Sept. 30	a/-53	July 11	a/-53	Apr. 4	-34
Oct. 26	a/-55	Oct. 31	a/-55	May 29	a/-56
Nov. 30	-17	Nov. --	a/-55	Sept. 26	-38.73
Dec. 27	-17	Dec. 20	-34		

(C-35-11)29db. William Whitney, Cedar City, Iron County. Diameter 12 inches, depth 91 feet. Measuring point, center of air gage, 3.0 feet above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 1, 1931	a/-53	Jan. --, 1933	-28	Dec. 20, 1934	-39
Nov. 7	-35	Feb. 27	-27	Jan. 28, 1935	-39
Dec. 4	-33	Mar. 30	-25	Feb. --	-39
Jan. 8, 1932	-35	Apr. 28	-25	Mar. 16	a/-55
Feb. 9	-35	May 31	-23	Apr. 22	a/-55
Mar. 31	-35	July 8	a/-45	May 31	a/-56
Apr. 22	-35	Aug. 25	-29	June 24	a/-56
May 26	-35	Sept. 28	-29	July 27	a/-58
June 23	-35	Dec. 28	-27	Aug. 30	a/-59
July 28	a/-45	Jan. --, 1934	-27	Oct. 31	-43
Aug. 29	a/-45	May --	a/-45	Dec. 3	-42
Sept. 30	a/-45	July 11	a/-47	Jan. 29, 1936	-41
Oct. 26	-28	Oct. 31	-40	Apr. 4	a/-57
Nov. 30	-28	Nov. --	-40	May 29	a/-61
Dec. 27	-28				

a/ Pumping from well.

(C-35-11)29dc. Edward T. Higbee, Cedar City, Iron County. Measuring point, center of air gage, 0.5 foot above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1931	-40	Jan. --, 1933	-38	Dec. 20, 1934	-45
Nov. 7	a/-56	Feb. 27	-37	Jan. 28, 1935	-44
Dec. 4	-39	Mar. 30	-37	Feb. --	-44
Jan. 8, 1932	-39	Apr. 28	a/-54	Mar. 16	-43
Feb. 9	-39	May 31	a/-55	Apr. 22	a/-62
Mar. 31	-37	July 8	-41	May 31	a/-62
Apr. 22	a/-55	Aug. 25	-41	June 29	a/-58
May 26	a/-55	Sept. 28	-41	Aug. 30	-48
June 22	a/-55	Dec. 28	-39	Oct. 31	-48
July 28	a/-56	Jan. --, 1934	-38	Dec. 3	-46
Aug. 29	a/-56	May	a/-56	Jan. 29, 1936	-44
Oct. 26	-39	July 11	a/-58	Apr. 4	a/-59
Nov. 30	-38	Oct. 31	-47	May 29	-53
Dec. 27	-38	Nov. --	-47		

(C-35-11)31ac. Heber C. Jenson, Cedar City, Iron County. Measuring point, bottom of hole in north side of casing, 1.7 feet above land surface. All measurements prior to 1936 and those on Apr. 4 and May 29, 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1931	-19	Jan. --, 1933	-19	Apr. 22, 1935	-26
Nov. 10	-19	Feb. 27	-19	May 31	-29
Dec. 4	-19	Mar. 30	-17	June 24	-29
Jan. 9, 1932	-19	Apr. 28	a/-62	Oct. 31	-51
Feb. 17	-19	May 31	-19	Dec. 3	-35
Mar. 26	-18	Sept. 28	-22	Jan. 29, 1936	-25.94
Apr. 22	-19	Dec. 28	-22	Apr. 4	-24
May 19	-19	Jan. --, 1934	-19	18	-24.9
June 22	-19	May --	-23	May 29	-26
July 28	-19	Oct. 31	-26	June 16	-29.78
Aug. 29	-22	Nov. --	-26	Aug. 2	-31.25
Sept. 30	-18	Dec. 20	-26	Sept. 25	-33.04
Oct. 26	-19	Jan. 28, 1935	-26	Nov. 23	-29.65
Nov. 30	-19	Feb. --	-26	Dec. 8	-29.20
Dec. 27	-19	Mar. 18	-26	22	-31.25

(C-35-11)32ad. Aurelius Haslam, Cedar City, Iron County. Diameter 12 inches, depth 87 feet. Measuring point, center of air gage, 1.8 feet above land surface. After May 29, 1936 measuring point was top of casing, 1.0 foot above surface. Measurements prior to Sept. 26, 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1931	-28	Feb. 27, 1933	-25	Feb. --, 1935	-35
Nov. 7	-30	Mar. 30	-28	Mar. 16	-35
Dec. 4	-30	Apr. 28	a/-42	Apr. 22	a/-49
Jan. 8, 1932	-29	May 31	a/-44	May 31	a/-54
Feb. 9	-28	July 8	a/-44	June 24	a/-53
Mar. 31	-26	Aug. 25	a/-46	July 27	a/-54
Apr. 23	a/-44	Sept. 28	a/-45	Aug. 30	a/-55
May 19	a/-44	Dec. 28	-28	Oct. 31	-41
June 22	a/-44	Jan. --, 1934	-28	Jan. 29, 1936	-58
July 28	a/-44	May --	a/-47	Apr. 4	-33
Aug. 29	-28	July 11	a/-50	May 29	a/-54
Sept. 17	-28	Oct. 31	-37	Sept. 26	a/-61.12
Oct. 26	-28	Nov. --	-37	Nov. 23	-41.67
Nov. 28	-28	Dec. 20	-36	Dec. 8	-41.59
Dec. 27	-27	Jan. 28, 1935	-35	22	-47.60
Jan. --, 1933	-26				

a/ Pumping from well.

(C-35-11)32cc. Elias M. Corry, Cedar City, Iron County. Diameter 12 inches, depth 287 feet. Measuring point, center of air gage, 2.0 feet above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1931	a/-40	Jan. --, 1933	-29	Dec. 20, 1934	-36
Nov. 10	-19 ?	Feb. 27	-29	Jan. 28, 1935	-36
Dec. 4	-31	Mar. 30	-28	Feb. --	-36
Feb. 17, 1932	-31	Apr. 28	a/-38	Mar. 18	-36
Mar. 26	-29	July 8	-19	Apr. 22	a/-45
Apr. 22	a/-40	Aug. 25	a/-40	May 31	a/-46
May 19	a/-40	Sept. 28	-31	June 24	a/-46
June 22	a/-40	Dec. 28	-31	July 20	a/-49
July 28	a/-40	Jan. --, 1934	-30	Aug. 30	a/-49
Aug. 29	a/-40	May --	a/-41	Dec. 3	-44
Sept. 30	-30	July 11	a/-43	Jan. 29, 1936	-38
Oct. 26	-30	Oct. 31	-37	Apr. 4	-42
Nov. 30	-30	Nov. --	-38	May 29	a/-51
Dec. 27	-29				

(C-35-11)33aa. Cottonwood Irrigation Co., Cedar City, Iron County. Diameter 15½ inches, depth 138 feet. Measuring point, top of casing, at land surface. Measurements prior to 1936 and on May 29, 1936 made by Utah State Agricultural Experiment Station. A recording gage was maintained on this well from Feb. 2, to May 13, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1931	-57.7	Jan. --, 1934	-55	Mar. 1, 1936	-62.86
Nov. 5	-56.5	May --	a/-74.5	10	-62.70
Jan. 8, 1932	-56	July 13	a/-75	20	-62.46
Feb. 18	-56	Oct. 25	-67	Apr. 1	-62.40
Mar. 31	-53.5	Nov. --	-67.5	10	-62.27
Apr. 23	-53.7	Dec. 20	-64.5	19	-62.20
May 27	-52.3	Jan. 29, 1935	-65	May 1	-62.35
June 23	-52	Feb. --	-65	10	-62.56
July 28	a/-69.5	Mar. 18	-62.2	13	-62.64
Aug. 29	a/-71	Apr. 22	-63	29	-62.1
Sept. 30	-53.9	May 31	-62	June 16	a/-86.0
Oct. 28	-53.7	June 29	-64	16	b/-67.99
Nov. 30	-55	July 27	-64.3	Aug. 2	a/-85.4
Dec. 27	-55	Oct. 31	-67.5	2	b/-69.80
Jan. --, 1933	-55	Dec. 28	-64	Sept. 25	a/-85.4
Mar. 30	-52.2	Jan. 29, 1936	-63.62	26	-71.0
Apr. 28	-53.5	Feb. 2	-63.40	Nov. 23	-67.90
July 8	a/-71	10	-63.23	Dec. 8	-67.59
Sept. 28	-60	20	-63.01	22	-67.18
Dec. 28	-56				

(C-35-11)33ab. Gronway R. Parry, Cedar City, Iron County. Measuring point, center of air gage, 1.0 foot above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1931	a/-65	Aug. 29, 1932	a/-62	July 8, 1933	a/-62
Nov. 5	-57	Sept. 30	-55	Aug. 25	a/-64
Dec. 5	-57	Oct. 28	-55	Sept. 28	a/-64
Jan. 8, 1932	-56	Nov. 30	-53	Dec. 28	-55
Feb. 18	-56	Dec. 27	-52	Jan. --, 1934	-55
Mar. 31	-54	Jan. --, 1933	-52	May --	a/-65
Apr. 23	-55	Feb. 27	-52	July 13	a/-69
May 27	a/-57	Mar. 30	-51	Oct. 25	a/-75
June 23	a/-57	Apr. 28	a/-61	Nov. --	-75
July 28	a/-60	May 31	a/-61	Dec. 20	-64

a/ Pumping from well.

b/ Pump stopped for 20 minutes.

(C-35-11)33ab.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 28, 1935	-63	June 29, 1935	a/-71	Dec. 3, 1935	a/-73
Feb. --	-63	July 27	a/-70	Jan. 29, 1936	-64
Mar. 18	-62	Aug. 30	a/-74	Apr. 4	-62
Apr. 22	-62	Oct. 31	-66	May 29	-71
May 31	-63				

(C-35-11)33bb. F. L. & A. C. Biederman, Cedar City, Iron County. Measuring point, center of air gage, 2.5 feet above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1931	-49	Jan. --, 1933	-45	Dec. 20, 1934	-54
Nov. 5	-53	Feb. 27	-44	Jan. 28, 1935	-53
Dec. 5	-47	Mar. 30	a/-49	Feb. --	-53
Jan. 8, 1932	-47	Apr. 28	a/-51	Mar. 18	-53
Feb. 18	-47	May 31	a/-51	Apr. 22	a/-58
Mar. 31	-45	July 8	a/-52	May 31	a/-59
Apr. 22	a/-51	Aug. 25	a/-53	June 29	a/-59
May 26	a/-49	Sept. 28	-48	July 27	a/-61
June 23	a/-49	Dec. 28	-47	Aug. 30	a/-62
July 28	a/-50	Jan. --, 1934	-46	Oct. 31	a/-62
Aug. 29	a/-51	May --	a/-54	Dec. 3	-57
Sept. 30	-46	July 13	a/-57	Jan. 29, 1936	-55
Oct. 28	-45	Oct. 31	a/-61	Apr. 4	a/-59
Nov. 30	-45	Nov. --	a/-61	May 29	a/-60
Dec. 27	-45				

(C-35-11)33db. W. H. Wood, Cedar City, Iron County. Diameter 12 inches, depth 200+ feet. Measuring point, center of air gage, 1.0 foot above land surface. Measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1931	-59	Mar. 30, 1932	-56	July 28, 1932	b/-60.6
Nov. 5	-58	Apr. 23	-56	Aug. 29	a/-69
Dec. 5	-58	May 27	-56	Feb. 27, 1933	-62
Jan. 8, 1932	-58	June 23	-53	Mar. 30	-62
Feb. 8	-58				

(C-35-12)18ddl. Columbia Steel Co., Iron Springs, Iron County. Diameter 10 inches, depth 44 feet. Measuring point, top of casing, 9.0 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 14, 1935	-3.70	June 16, 1936	-3.08	Sept. 24, 1936	-3.51
Jan. 30, 1936	-3.43	Aug. 2	-3.16	Nov. 19	-3.33
Apr. 18	-2.95				

(C-35-12)34. R. J. & W. M. Shay, Cedar City, Iron County. Diameter 12 inches, depth 108 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1936	-16.97	Nov. 23, 1936	-17.07	Dec. 22, 1936	-16.50
Sept. 24	-17.46	Dec. 8	-16.90		

a/ Pumping from well.

b/ Measurement by tape.

(C-35-15)3ac. R. D. Clarke, Beryl, Iron County. Diameter 12 inches, depth 45+ feet. Measuring point, top of casing, 0.75 foot above land surface. Depth to water: Sept. 24, 1936, 15.60 feet; Nov. 19, 1936, 15.60 feet.

(C-35-15)3dcl. R. D. Clarke, Beryl, Iron County. Diameter 12 inches, depth 130 feet. Measuring point, top of casing, at land surface. Windmill well at ranch house.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	a/-18.35	Jan. 30, 1936	-15.78	Sept. 24, 1936	b/-18.70
Oct. 14	a/-16.96	Apr. 17	a/-15.37	Nov. 19	-16.25
Nov. 26	a/-16.27				

(C-35-15)3dc2. R. D. Clarke, 175 feet east of well (C-35-15)3dcl. Beryl, Iron County. Diameter 16 inches, depth 350 feet. Measuring point, bottom of slot in casing, at land surface. Depth to water: Aug. 28, 1936, 42 feet, pumping, measured by J. E. Hayes, Resettlement Administration; Sept. 24, 1936, 19.25 feet, pump stopped at midnight, Sept. 23.

(C-35-15)6cd. Frank Bridel, Beryl, Iron County. Diameter 12 inches, depth 170 feet. Measuring point, top of casing, 2.0 feet above land surface. Depth to water: Sept. 23, 1936, 15.48 feet; Nov. 19, 1936, 15.01 feet.

(C-35-15)10acl. R. D. Clarke, half a mile south of ranch house. Beryl, Iron County. Diameter 16 inches, depth 334 feet. Measuring point, bottom of slot in casing, 2.0 feet below land surface. Depth to water: Sept. 13, 1935, 18.28 feet.

(C-35-15)10ad2. R. D. Clarke, in southeast corner of property, Beryl, Iron County. Diameter 16 inches, depth 350 feet. Measuring point, bottom of slot in casing, at land surface. Depth to water: Sept. 24, 1936, 20.18 feet.

(C-35-15)10bd. Walter M. Martin, Beryl, Iron County. Diameter 16 inches, depth 180 feet. Measuring point, top of casing, 0.8 foot above land surface. Depth to water: Nov. 19, 1936, 19.50 feet.

(C-35-15)30bc. Hugh M. Ash, Newcastle, Iron County. Diameter 48 inches, depth 34 feet. Measuring point, top of 2- by 6-inch curbing, 1.5 feet above land surface. Depth to water: Sept. 24, 1936, 29.29 feet; Nov. 19, 1936, 29.36 feet.

(C-35-16)9cc. W. & U. Hasegawa, Beryl, Iron County. Diameter 12 inches, depth 51 feet. Measuring point, top of curb, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 25, 1935	-15.70	Apr. 17, 1936	-15.56	Aug. 2, 1936	-16.04
Jan. 30, 1936	-15.59	June 15	-15.85	Nov. 19	-15.96

(C-35-17)3bb. John L. Sevy, Yale, Iron County. Diameter 12 inches. Measuring point, top of casing, 0.7 foot above land surface. Depth to water: Apr. 17, 1936, 45.99 feet; June 16, 46.05 feet; Sept. 24, 46.08 feet; Nov. 19, 46.11 feet.

(C-35-17)25cd. Henry Brenn, Beryl, Iron County. Diameter 52 inches, depth 135 feet. Measuring point, bottom of south rail over pit, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 12, 1935	-35.40	Jan. 30, 1936	-35.53	Aug. 2, 1936	-35.67
Oct. 14	-35.38	Apr. 17	-35.53	Sept. 24	-35.72
Nov. 25	-35.48	June 16	-35.60	Nov. 19	-35.79

a/ Windmill stopped 10 minutes.

b/ All pumping on ranch ceased at midnight, Sept. 23, 1936.

(C-36-5)29da. Yardley Bros., Hatch, Garfield County. Diameter 48 inches, depth 40 feet. Measuring point, top of 1- by 12-inch curb, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 9, 1935	-29.66	Apr. 20, 1936	-34.57	Sept. 28, 1936	-28.06
Oct. 12	-27.63	Aug. 4	-30.25	Nov. 25	-29.63
Jan. 27, 1936	-34.18				

(C-36-11)6aa. Leonard Hargrave, Cedar City, Iron County. Diameter 12 inches, depth 260 feet. Measuring point, top of casing, 0.4 foot below land surface. Field windmill. All measurements prior to 1936 made by Utah State Agricultural Experiment Station. Equipped with turbine irrigation pump during Experiment Station's measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 5, 1931	-25.5	Oct. 26, 1932	-23.8	June 16, 1936	c/-34.42
Jan. 8, 1932	-25	Nov. 30	-23.5	16	b/-34.44
Feb. 17	-25	Dec. 27	-24	Aug. 2	-36.77
Mar. 31	-24	Jan. --, 1933	-24	Sept. 25	-37.90
Apr. 22	a/-80+	Feb. 27	-22.5	Nov. 23	-35.17
May 19	-25.7	Mar. 30	-22	Dec. 8	-34.76
June 22	a/-82+	Feb. 1, 1936	-31.65	22	-34.48
Sept. 30	-25.2	Apr. 18	b/-30.59		

(C-36-11)6aa2. Leonard Hargrave, Cedar City, Iron County. Diameter 12 inches, depth 260 feet. Measuring point, top of casing, at land surface. Depth to water: Sept. 25, 1936, 39.80 feet.

(C-36-11)8aa. Leonard Hargrave, about 60 feet north of residence. Cedar City, Iron County. Diameter 10 inches, depth 105 feet. Measuring point, top of casing, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 14, 1935	-58.77	Apr. 18, 1936	-52.11	Sept. 25, 1936	-63.15
Oct. 14	-59.89	June 16	-58.76	Nov. 23	-58.80
Nov. 25	-57.50	Aug. 2	-60.63	Dec. 8	-58.80
Jan. 30, 1936	-53.52	2	d/-61.82	22	-58.68

(C-36-11)8bb. J. Lawrence Bess, Cedar City, Iron County. Diameter 12 inches. Measuring point, top of casing, at land surface. All measurements except Feb. 1, 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1931	-29	Nov. 30, 1932	-28	Jan. 28, 1935	-33
Dec. 4	-29	Dec. 27	-27	Feb. --	-33
Jan. 9, 1932	-29	Jan. --, 1933	-27	Mar. 18	-33
Feb. 17	-29	Feb. 27	-27	Apr. 22	a/-48
Mar. 30	-29	Dec. 28	-27	May 31	a/-49
Apr. 23	-27	Jan. --, 1934	-27	June 24	-35
May 26	-27	July 11	-31	July 20	a/-51
June 22	-28	Oct. 31	-35	Aug. 30	a/-51
Sept. 30	-29	Nov. --	-35	Feb. 1, 1936	-35.63
Oct. 26	-29	Dec. 20	-33		

a/ Pumping from well.

b/ Windmill stopped 10 minutes.

c/ Windmill stopped 5 minutes.

d/ After pumping 40 gallons a minute for 10 minutes.

(C-36-11)8cb. Lehi M. Jones, Cedar City, Iron County. Diameter 14 inches. Measuring point, top of casing, 0.5 foot above land surface. All measurements except Sept. 26, 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 1, 1931	-25	Jan. --, 1933	-23	Jan. 28, 1935	-27
Nov. 7	a/-34	Feb. 27	-23	Feb. --	-27
Dec. 4	-25	Mar. 30	-23	Mar. 18	-27
Jan. 9, 1932	-25	Apr. 28	a/-34	Apr. 22	-29
Feb. 7	-25	May 31	a/-34	May 31	b/-29.0
Mar. 30	-23	July 8	a/-34	June 24	-29
Apr. 23	-23	Aug. 25	a/-35	July 20	a/-38
May 26	-23	Sept. 28	a/-35	Aug. 30	a/-39
June 22	a/-34	Dec. 28	a/-34	Oct. 31	a/-39
July 30	a/-34	Jan. --, 1934	-23	Dec. 3	a/-39
Aug. 25	a/-34	May	a/-35	Jan. 29, 1936	a/-36
Sept. 30	a/-35	July 11	a/-35	Apr. 4	a/-36
Oct. 26	a/-35	Oct. 31	-29	May 29	a/-37
Nov. 30	a/-35	Nov. --	-29	Sept. 26	-38.25
Dec. 27	-23	Dec. 20	-27		

(C-36-11)18ab. Jacob Smith, Cedar City, Iron County. Diameter 8 inches, depth 180 feet. Measuring point, top of casing, at land surface. Recording gage operated on this well since Nov. 24, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 23, 1936	-27.41	Dec. 10, 1936	-26.59	Dec. 31, 1936	-25.91
30	-27.00	20	-26.22		

(C-36-11)18ac. Henry C. Esplin, Cedar City, Iron County. Diameter 14 inches, depth 230 feet. Measuring point, center of air gage, 0.6 foot above land surface. All measurements are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 7, 1931	-40	Jan. --, 1933	-37	Dec. 20, 1934	-39
Dec. 4	-37	Feb. 27	-37	Jan. 28, 1935	-39
Jan. 9, 1932	-37	Mar. 30	-37	Feb. --	-39
Feb. 17	-37	Apr. 28	-37	Mar. 18	-39
Mar. 30	-35	May 31	-37	Apr. 22	-39
Apr. 23	-35	July 8	a/-56	May 31	-40
May 26	-35	Aug. 25	a/-56	June 24	a/-57
June 22	-35	Sept. 28	a/-56	July 20	a/-56
July 30	a/-56	Dec. 28	-38	Aug. 30	a/-57
Aug. 25	a/-56	Jan. --, 1934	-37	Oct. 31	a/-57
Sept. 30	a/-56	May	a/-55	Dec. 21	-40
Oct. 26	-37	July 11	a/-56	Jan. 29, 1936	-40
Nov. 30	-37	Oct. 31	-39	Apr. 4	-40
Dec. 27	-37	Nov. --	-39	May 29	a/-56

(C-36-12)1aa. Dr. M. J. McFarlane, Cedar City, Iron County. Diameter 12 inches, depth 300+ feet. Measuring point, top of casing, 0.5 foot above land surface. Measurements prior to 1936 and those on April 4 and May 29, 1936 are air-gage readings made by Utah State Agricultural Experiment Station.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 2, 1931	-10	Feb. 17, 1932	-10	June 22, 1932	a/-50
Nov. 10	-10	Mar. 26	-4	July 28	a/-49
Dec. 4	-10	Apr. 22	a/-51	Aug. 29	a/-49
Jan. 9, 1932	-10	May 19	a/-49	Sept. 30	a/-49

a/ Pumping from well.

b/ Tape measurement.

(C-36-12)1aa.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 26, 1932	- 4	Jan. --, 1934	- 4	July 20, 1935	a/-49
Nov. 30	- 4	May --	a/-49	Aug. 30	a/-49
Dec. 27	a/-47	July 11	a/-51	Oct. 31	a/-49
Jan. --, 1935	- 3	Oct. 31	-12	Dec. 3	a/-48
Feb. 27	- 3	Nov. --	-12	Jan. 29, 1936	-11.74
Mar. 30	- 2	Dec. 20	- 9	Apr. 4	-10
Apr. 28	a/-49	Jan. 28, 1935	- 8	18	-10.80
May 31	a/-49	Feb. --	- 8	May 29	a/-50
July 8	a/-49	Mar. 18	-10	Sept. 25	a/-50.7
Aug. 25	a/-49	Apr. 22	a/-49	Nov. 23	-16.59
Sept. 28	a/-49	May 31	a/-48	Dec. 8	-24.26
Dec. 28	- 3	June 24	a/-48	22	-14.68

(C-36-12)12db. Branch Agricultural College, Cedar City, Iron County. Diameter 10 inches. Measuring point, top of casing, 2.3 feet above land surface. Depth to water: Nov. 23, 1936, 19.91 feet; Dec. 8 (pump stopped a few minutes), 22.39 feet; Dec. 8 (50 minutes after first measurement), 20.86 feet; Dec. 22, 20.15 feet.

(C-36-12)14bb. Geo. H. Pratt, Cedar City, Iron County. Diameter 11 inches, depth 200+ feet. Measuring point, top of casing, 1.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 31, 1936	-11.03	Aug. 2, 1936	-11.40	Dec. 8, 1936	-11.49
Apr. 18	-10.65	Sept. 25	-11.67	22	-11.39
June 16	-11.01	Nov. 23	-11.64		

(C-36-12)21cc. N. Bullock, Cedar City, Iron County. Diameter 3 inches, depth 160 feet. Measuring point, top of coupling, 1.0 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 14, 1935	+4.5	Jan. 31, 1936	b/+8.0	Aug. 2, 1936	+7.9
Oct. 13	+4.4	Apr. 18	+8.05	Sept. 25	+7.65
Jan. 31, 1936	+4.4	June 16	+7.85	Nov. 22	+7.9

(C-36-17)12b. Public land, Modena, Iron County. Diameter 48 to 8 inches, depth 74(?) feet. Measuring point, bottom of railroad tie over pit, 1.0 foot above land surface. Depth to water: Sept. 24, 1936, 71.28 feet; Nov. 19, 1936, 71.87 feet.

(C-37-12)3dd. M. M. Vandenberghe, Cedar City, Iron County. Diameter 4 inches, depth 230 feet. Measuring point, top of ell, 0.4 foot above land surface. Found flowing prior to all measurements except Jan. 29, 1936, when well was leaking only.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 14, 1935	+3.5	Apr. 19, 1936	+3.6	Sept. 27, 1936	+3.65
Oct. 13	+3.45	June 16	+3.4	Nov. 24	+3.20
Jan. 29, 1936	+5.35	Aug. 3	+4.6		

a/ Pumping from well.

b/ Previous measurements made while one outlet was open. This and following measurements made after both outlets had been closed 10 minutes.

(C-37-12)14dd. Nannie Pengilly, Kanarraville, Iron County. Diameter 8 inches, depth 161(?) feet. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: Sept. 27, 1936, 65.85 feet; Nov. 24, 1936, 65.84 feet.

(C-37-12)23ac. Nannie Pengilly, Kanarraville, Iron County. Diameter 16 inches. Measuring point, top of concrete pump base, 1.0 foot above land surface. Depth to water: Sept. 14, 1935, 52.55 feet; Sept. 27, 1936, 52.21 feet.

(C-37-12)34ab. Drought Relief Administration, Kanarraville, Iron County. Diameter 12 inches, depth 190 feet. Measuring point, bottom of hole in base of turbine, 1.3 feet above land surface. Drilled for Kanarra Field Irrigation & Reservoir Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 22, 1934	a/-41	Jan. 28, 1936	-46.76	Aug. 3, 1936	b/-66.7
Oct. 13, 1935	-48.23	Apr. 19	b/-62.5	Sept. 27	-50.45
Nov. 25	-47.47	June 16	b/-66.5	Nov. 24	-48.87

(C-37-17)12cd. Drought Relief Administration, Enterprise, Washington County. Diameter 12 inches, depth 201 feet. Measuring point, bottom of slot in casing, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 12, 1935	-42.54	Jan. 30, 1936	-42.42	Aug. 2, 1936	-42.50
Oct. 14	-42.58	Apr. 17	-42.52	Sept. 24	-42.50
Nov. 25	-42.64	June 16	-42.38	Nov. 19	-42.68

(C-37-17)14ac. Enterprise Town, Enterprise, Washington County. Diameter 10 inches, depth 135 feet. Measuring point, top of casing, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 12, 1935	b/-50.0	Jan. 30, 1936	-35.42	Sept. 24, 1936	c/-39.69
Oct. 14	-38.84	Apr. 17	-35.28	Nov. 19	-35.82
Nov. 25	-35.14	Sept. 24	b/-50.80		

(C-42-10)33bb. Oscar DeMill, Rockville, Washington County. Diameter 42 inches, depth 146 feet. Measuring point, top of 1- by 4-inch curb, 3.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 11, 1935	-125.75	Jan. 28, 1936	-125.71	Aug. 3, 1936	-123.30
Oct. 13	-125.49	Apr. 19	-125.39	Nov. 24	-121.65

(C-42-11)3ac. Drought Relief Administration, Grafton, Washington County. Diameter 6½ inches, depth 62 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 12, 1934	a/-20	Apr. 19, 1936	-18.08	Sept. 27, 1936	-17.42
Jan. 28, 1936	-18.28	Aug. 3	-18.07	Nov. 24	-17.11

a/ Report by Drought Relief Administration.

b/ Pumping from well.

c/ Pump stopped 10 minutes.

(C-42-11)3dd. Oscar DeMill, Grafton, Washington County. Diameter 6 inches, depth 800 feet. Measuring point, top of casing, 0.8 foot above land surface. Depth to water: Jan. 28, 1936, 18.51 feet; Apr. 19, 21.59 feet; Sept. 27, 50+ feet; Nov. 24, 53.04 feet.

(C-43-5)24da. Lester Little, Kanab, Kane County. Diameter 26 inches, depth 44 feet. Measuring point, top of nut on west side of well opening, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 10, 1935	a/-43.43	Apr. 20, 1936	-40.50	Nov. 25, 1936	b/-44.0
Oct. 13	-40.73	Aug. 3	a/-43.46	25	c/-43.45
Jan. 28, 1936	-40.65	Sept. 28	-43.28		

(C-43-6)34cd. Drought Relief Administration, Kanab, Kane County. Diameter 96 inches, depth 71 feet. Measuring point, bottom of pump base, 2.0 feet above land surface. Used by Jos. L. Ford. Depth to water: Sept. 10, 1935, 59.98 feet.

(C-44-5)6cb. Drought Relief Administration, Kanab, Kane County. Diameter 120 inches, depth 80 feet. Measuring point, bottom of pump base, 1.0 foot above land surface. Used by Lloyd U. Chamberlin.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 10, 1935	a/-57.35	Apr. 20, 1936	-59.52	Sept. 28, 1936	c/-57.38
Oct. 13	-58.29	Aug. 3	-57.02	Nov. 25	b/-59.80
Jan. 28, 1936	-56.66	Sept. 28	b/-57.41		

(D-1-1)4bb. Salt Lake City Corporation, 13th East St. and 1st South St., Salt Lake City, Salt Lake County. Diameter 15½ inches, depth 153 feet. Measuring point, top of casing, at land surface, and 4,572.60 feet above sea level. Salt Lake City Well 1060. Recording gage operated on this well since July 15, 1934. Pronounced interference is caused in this well by pumping a municipal well 600 feet to the north.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 21, 1934	-103.75	Dec. 15, 1934	-110.86	Nov. 30, 1935	-107.83
25	-104.8	31	-108.54	Dec. 15	-107.51
July 15	-104.59	Jan. 15, 1935	-107.51	30	-107.08
18	-104.30	31	-107.28	Jan. 15, 1936	-106.97
25	-108.85	Feb. 15	-107.17	30	-106.86
31	-110.75	28	-106.93	Feb. 29	-106.69
Aug. 10	-112.90	Mar. 15	-106.93	Mar. 30	-106.30
22	-114.71	31	-106.82	Apr. 30	-106.11
23	-113.96	Apr. 15	-106.86	May 15	-105.88
31	-115.55	30	-106.67	30	-105.45
Sept. 3	-115.93	May 31	-106.50	June 15	-104.68
4	-115.26	June 30	-106.14	30	-104.00
10	-116.47	July 25	-105.77	July 15	-103.47
20	-117.45	Aug. 5	-105.92	29	-103.08
27	-118.07	14	-115.88	Aug. 1	-106.80
30	-115.37	18	-112.88	10	-103.69
Oct. 4	-113.68	Sept. 7	-120.39	27	-102.69
9	-117.23	9	-118.45	Oct. 15	-101.40
12	-115.69	23	-122.17	30	-101.10
15	-117.48	Oct. 5	-114.00	Nov. 15	-101.12
Nov. 5	-110.80	15	-111.62	30	-100.93
15	-109.60	30	-109.60	Dec. 15	-100.81
Dec. 6	-108.25	Nov. 15	-108.41	31	-100.70
10	-114.30				

a/ Windmill just stopped.

b/ Windmill pumping.

c/ Windmill stopped 10 minutes.

(D-1-1)6cc. Royal Laundry, 6th South St. and State St. Salt Lake City, Salt Lake County. Diameter 10 inches, depth 580 feet. Measuring point, top of casing, 4.5 feet above land surface and 4,250.90 feet above sea level. Salt Lake City Well 1050. A recording gage has been maintained on this well during irregular periods.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 8, 1934	a/-4.53	May 17, 1935	c/- 8.26	Dec. 15, 1935	-10.98
15	-4.74	23	c/- 8.26	Jan. 1, 1936	-10.75
July 1	-5.37	31	c/- 8.26	15	-10.49
15	-5.85	June 6	c/- 8.18	Feb. 1	-10.23
Aug. 1	-6.69	15	a/- 8.23	15	-10.01
15	-7.36	July 1	- 8.34	Mar. 1	-10.00
Sept. 1	-8.12	15	- 8.56	15	- 9.91
15	-8.74	26	b/- 8.74	Apr. 1	- 9.83
Oct. 1	-9.26	Aug. 1	c/- 8.91	15	- 9.88
15	-9.46	8	c/- 9.25	May 1	- 9.84
Nov. 1	-9.52	13	c/- 9.52	15	- 9.87
21	b/-9.24	20	c/- 9.85	June 1	- 9.98
Dec. 6	c/-9.08	28	c/-10.22	15	- 9.98
11	a/-9.03	Sept. 4	c/-10.55	July 1	- 9.56
20	-8.90	11	c/-10.89	15	- 9.70
Jan. 1, 1935	-8.91	18	c/-11.17	Aug. 1	- 9.76
16	-8.76	27	c/-11.54	15	- 9.94
Feb. 1	-8.80	Oct. 2	c/-11.60	27	b/-10.12
15	-8.65	8	c/-11.66	Sept. 10	c/-10.29
Mar. 1	-8.53	29	c/-11.54	Oct. 1	c/-10.55
15	-8.43	Nov. 1	a/-11.54	8	c/-10.65
Apr. 1	-8.42	15	-11.46	16	c/-10.66
15	-8.36	21	-11.36	Nov. 27	c/-10.34
May 1	-8.28	Dec. 5	-11.02	Dec. 17	c/-10.14
7	b/-8.29				

(D-1-1)21bd. Utah State Prison, Salt Lake City, Salt Lake County. Diameter 15 inches, depth 467 feet. Measuring point, top of casing, 1.9 feet above land surface and 4,464.89 feet above sea level. Field no. 94; Salt Lake City no. 1042. Numerous measurements have been made of the depth to water in this well, but only a sufficient number to outline the trend of the water-level are given in the following table.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1931	-79.23	Dec. 22, 1932	-76.26	June 26, 1934	c,d/-86.65
Oct. 12	-79.42	29	-76.15	July 5	d/-88.05
29	-79.19	Jan. 12, 1933	-74.93	10	d/-88.95
Nov. 2	-79.16	26	-73.16	21	c,d/-91.40
Feb. 3, 1932	-81.42	Feb. 9	-72.69	Aug. 2	c,d/-91.20
Mar. 2	-81.99	23	-72.48	23	c,d/-92.35
Apr. 9	-79.37	Mar. 9	-73.72	29	c/-88.27
May 6	-78.4	Apr. 6	-73.07	Sept. 10	c,d/-91.40
13	-76.9	20	-73.22	28	c/-88.43
June 1	-75.10	May 4	-71.97	Oct. 5	c/-88.26
16	-74.25	June 8	-70.96	20	c/-88.98
30	-74.91	July 6	-71.27	30	c/-88.06
July 7	-75.08	20	-70.10	Nov. 3	c/-88.24
21	-74.57	Aug. 3	-71.10	20	c/-86.65
28	-74.81	17	-71.90	Dec. 8	c/-84.86
Aug. 4	-74.28	Oct. 7	-73.70	31	c/-80.74
11	-74.50	Nov. 2	-74.50	Jan. 7, 1935	c/-80.63
25	d/-81.32	Dec. 7	-73.92	28	c/-81.21
Sept. 1	-74.56	Jan. 8, 1934	-75.44	Feb. 11	c/-79.06
8	-74.48	Feb. 8	-76.02	Mar. 11	c/-80.10
22	-74.94	Mar. 8	-76.80	Apr. 1	c/-82.25
29	-74.71	29	-77.18	22	c/-83.44
Oct. 6	-74.91	Apr. 16	-78.00	May 6	c/-82.78
20	-74.63	May 26	-79.80	27	c/-78.77
Nov. 2	-75.39	26	d/-85.50	June 11	c/-79.58
17	-75.92	June 11	-80.43	20	c/-79.08
Dec. 1	-76.00	21	-80.77	July 15	c/-79.09

a/ Recording gage installed.

b/ Recording gage removed.

c/ By Salt Lake City Corporation.

d/ Pumping from well.

(D-1-1)21bd.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 26, 1935	c/d/-87.00	Mar. 24, 1936	c/-77.45	Aug. 4, 1936	c/-71.20
Sept. 3	c/-81.65	Apr. 13	c/-78.85	27	c/-71.96
16	c/-81.92	27	c/-74.27	31	c/-72.37
30	c/-82.83	May 9	c/-73.64	Sept. 10	c/-72.82
Oct. 4	c/-82.81	25	c/-71.77	26	c/-73.82
28	c/-81.21	June 1	c/-71.74	Oct. 6	c/-73.87
Nov. 25	c/-79.33	5	c/-70.79	17	c/-73.55
Dec. 10	c/-78.86	13	c/-70.32	24	c/-72.41
Jan. 14, 1936	c/-80.02	20	c/-71.32	Nov. 3	c/-72.36
Feb. 1	c/-77.80	July 3	c/-70.32	Dec. 1	c/-71.53
19	c/-74.73	6	c/-70.84	23	c/-70.30
Mar. 4	c/-77.36	14	c/-70.05	29	c/-70.44
14	c/-78.12	27	c/-71.09		

(D-1-1)31bd1. Herman H. Kaumans, 3707 South 2nd East St., Murray, Salt Lake County. Diameter 2 inches, depth 260 or 300 feet. Measuring point, top of $\frac{3}{4}$ -inch ell, 0.8 foot above land surface. Pressure head: May 21, 1936, 9.15 feet.

(D-1-1)31bd2. N. M. Long, 3730 McCall St., Murray, Salt Lake County. Diameter 2 inches. Measuring point, top of reducing ell, 1.7 feet above land surface. Pressure head: May 22, 1936, 10.8 feet.

(D-1-1)31bd3. F. P. Shay, 3734 McCall St., Murray, Salt Lake County. Diameter 2 inches, depth 275 feet. Measuring point, top of ell, 1.0 foot above land surface. Pressure head: May 22, 1936, 8.35 feet.

(D-1-1)31bd4. Zions Benefit Building Society, 3738 McCall St., Murray, Salt Lake County. Diameter 2 inches, depth 75 or 150 feet. Measuring point, top of reducer, at land surface. Pressure head: May 22, 1936, 6.5 feet.

(D-1-1)31bd5. Alice S. D. Park, 3693 South 3rd East St., Murray, Salt Lake County. Diameter 2 inches, depth 250 feet. Measuring point, top of 1-inch tee, 1.8 feet above land surface. Pressure head: May 21, 1936, 9.2 feet.

(D-1-1)31ca1. Tony Jacobson, 3746 McCall St., Murray, Salt Lake County. Diameter 2 inches. Measuring point, top of tee, 3.3 feet above land surface. Pressure head: May 22, 1936, 7.2 feet.

(D-1-1)31ca2. Earl W. Julian, 3752 McCall St., Murray, Salt Lake County. Diameter 2 inches, depth 304 feet. Measuring point, top of reducer, 0.5 foot above land surface. Pressure head: May 22, 1936, 9.8 feet.

(D-1-1)31ca3. Wm. C. Atkinson, 3780 McCall St., Murray, Salt Lake County. Diameter 2 inches, depth 290 feet. Measuring point, top of tee, 3.2 feet above land surface. Pressure head: May 22, 1936, 6.95 feet.

(D-1-1)31ca4. E. D. Baker, 3790 McCall St., Murray, Salt Lake County. Diameter 2 inches, depth 400 feet. Measuring point, top of tee, 2.5 feet above land surface. Pressure head: May 22, 1936, 7.25 feet.

(D-1-1)31ca5. E. M. Kinsman, 3821 McCall St., Murray, Salt Lake County. Diameter 2 inches, depth 300 feet. Measuring point, top of tee, 2.5 feet above land surface. Pressure head: May 20, 1936, 7.45 feet.

(D-1-1)31ca6. A. S. Chatterton, 3838 McCall St., Murray, Salt Lake County. Diameter 2 inches. Measuring point, top of ell, 2.6 feet above land surface. Pressure head: May 22, 1936, 6.65 feet.

(D-1-1)31ca7. John Walker, 3840 McCall St., Murray, Salt Lake County. Diameter 2 inches. Pressure head: May 22, 1936, 7.85 feet.

(D-1-1)31ca8. A. E. White, 3844 McCall St., Murray, Salt Lake County. Diameter 2 inches. Measuring point, top of 1½-inch ell, 2.0 feet above land surface. Pressure head: May 22, 1936, 4.90 feet.

(D-1-1)31ca9. Benj. S. Townson, 215 East 39th South St., Murray, Salt Lake County. Diameter 2 inches, depth 160 feet. Measuring point, top of tee, 1.5 feet above land surface. Pressure head: May 21, 1936, 5.45 feet.

(D-1-1)31cb. Poehlmann Hatchery, 3865 South State Street, Murray, Salt Lake County. Diameter 3 inches, depth 299 feet. Measuring point, top of tee, 1.5 feet above land surface. Pressure head: May 21, 1936, 8.95 feet.

(D-1-4)31bd. R. W. Durant, Snyderville, Summit County. Diameter 36 inches, depth 18 feet. Measuring point, top of curbing, 0.2 foot above land surface. Depth to water: Oct. 27, 1936, 13.44 feet.

(D-2-1)4db. Matt Templeman, Murray, Salt Lake County. Diameter 3 inches, depth 310 feet. Measuring point, top of casing, at land surface and 4,384.13 feet above sea level. Field no. 80; Salt Lake City no. 233. See U. S. Geol. Survey Water-Supply Paper 777, p. 246. (The well number is corrected from (D-2-1)4dc.)

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 6, 1936	a/-6.07	May 19, 1936	a/-4.87	Sept. 21, 1936	a/+0.24
15	a/-6.13	June 3	-3.47	Oct. 2	+0.63
28	a/-6.22	July 2	a/-0.82	20	a/+0.39
Feb. 15	a/-6.20	14	a/-0.08	Nov. 3	a/-0.23
27	-6.45	29	a/+0.50	17	a/-0.42
Mar. 9	-6.38	Aug. 19	a/+0.95	Dec. 3	a/-0.49
Apr. 13	-6.39	Sept. 1	a/+0.38	7	-0.59
25	a/-6.40	2	a/+0.66	18	a/-0.88

(D-2-1)7bc. American Smelting & Refining Co., Murray, Salt Lake County. Diameter 2 inches, depth 184 feet. Measuring point, top of cap, 0.5 foot above land surface and 4,274.23 feet above sea level. Field no. 1391; Salt Lake City no. 720. Recording gage operated on this well since Oct. 31, 1933. See U. S. Geol. Survey Water-Supply Paper 777, p. 247. The measuring point has been lowered 2.32 feet in the following table.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 1, 1936	+18.0	May 30, 1936	+16.2	Aug. 18, 1936	+16.4
15	+18.5	June 6	+17.0	29	+15.0
Feb. 1	+18.5	20	+14.8	Sept. 1	+15.5
15	+18.7	30	+15.2	23	+16.65
29	+19.0	July 10	+15.1	Oct. 21	+17.2
Mar. 15	+18.9	14	+16.2	31	+16.8
30	+19.1	23	+14.8	Nov. 15	+16.6
Apr. 15	+18.4	27	+15.8	30	+17.7
30	+16.9	Aug. 1	+14.8	Dec. 15	+18.0
May 5	+18.2	7	+15.6	30	+18.3
15	+16.6				

(D-2-1)8ad. Chester Cahoon, Murray, Salt Lake County. Diameter 3 inches, depth 90 feet. Measuring point, top of recording-gage platform, 8.75 feet above land surface and 4,333.00 feet above sea level. Field no. 73; Salt Lake City no. 7. Recording gage operated on this well since June 16, 1932. See U. S. Geol. Survey Water-Supply Paper 777, p. 248.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 1, 1936	-3.21	Mar. 13, 1936	-3.06	Apr. 16, 1936	-2.65
15	-3.12	25	-2.80	24	-3.25
31	-3.21	Apr. 5	-3.04	28	-3.18

a/ By Salt Lake City Corporation.

(D-2-1)8ad.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 7, 1936	-2.30	July 25, 1936	-2.05	Oct. 15, 1936	-2.15
13	-2.30	Aug. 3	-2.02	31	-2.10
19	-3.78	8	-2.60	Nov. 15	-2.33
June 5	-2.29	19	-1.65	30	-2.25
19	-3.05	29	-3.20	Dec. 10	-2.27
30	-2.05	Sept. 7	-2.25	24	-1.76
July 5	-2.50	10	-3.20	30	-1.70
15	-1.65	25	-3.10		
23	-2.70	30	-2.25		

(D-2-1)8bb. A. R. & T. E. Hogge, Naylor Lane and 48th South St., Murray, Salt Lake County. Diameter 2 inches, depth 300 feet. Measuring point, top of tee, 1.4 feet above land surface and 4,322.89 feet above sea level. Field no. 98; Salt Lake City no. 412. A great many measurements were made on this well, but only a sufficient number to show the general trend of the water level in the well are given in the following table.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 15, 1931	-5.83	Mar. 19, 1934	a/-5.38	Aug. 14, 1935	a/-6.93
Nov. 5	-5.55	Apr. 4	a/-5.55	28	a/-7.00
Dec. 7	-5.87	30	a/-6.34	Sept. 10	a/-6.64
Jan. 6, 1932	-5.94	May 5	a/-6.50	17	a/-6.90
Feb. 13	-5.99	15	a/-6.48	26	a/-4.45
25	-6.02	31	a/-6.38	Oct. 8	a/-6.59
Mar. 3	-5.81	June 9	a/-6.18	23	a/-3.65
17	-6.00	14	a/-6.90	29	-5.55
24	-5.68	21	a/-6.54	Nov. 6	a/-3.14
Apr. 14	-6.06	25	a/-6.35	Dec. 10	a/-2.53
28	-5.72	July 10	a/-7.80	17	a/-3.29
May 19	-6.36	19	a/-8.10	30	a/-2.74
June 9	-5.60	25	a/-7.45	Jan. 9, 1936	a/-3.12
July 6	-6.17	Aug. 1	a/-8.17	14	a/-2.57
14	-5.79	24	a/-8.45	Feb. 6	a/-3.43
Aug. 4	-6.00	28	a/-8.87	13	a/-2.71
25	-6.15	Sept. 3	a/-7.83	27	-2.53
Sept. 3	-5.52	10	a/-7.72	Mar. 28	a/-2.40
10	-5.83	22	a/-7.15	Apr. 13	-2.51
Oct. 1	-5.52	31	a/-7.10	21	a/-4.63
22	-5.29	Nov. 5	a/-7.12	May 4	a/-2.88
Nov. 4	-5.34	9	a/-6.17	19	a/-5.41
30	-5.11	14	a/-4.90	June 6	-2.38
Dec. 3	-5.37	16	a/-6.44	9	a/-2.32
8	-5.36	27	a/-6.33	23	a/-3.47
16	a/-5.63	30	a/-3.98	30	a/-2.56
24	a/-5.46	Dec. 4	a/-3.69	July 7	a/-4.44
Jan. 15, 1933	a/-5.44	12	a/-2.42	14	a/-2.11
Feb. 16	a/-5.80	27	a/-2.70	21	a/-5.31
Mar. 10	a/-5.73	Jan. 8, 1935	a/-2.29	23	-4.55
11	a/-5.58	22	a/-3.55	29	a/-2.75
Apr. 8	a/-5.73	Feb. 13	a/-3.09	Aug. 4	a/-3.27
May 9	a/-5.52	Mar. 20	a/-3.08	20	a/-2.45
June 10	a/-6.10	22	a/-3.62	26	a/-5.52
July 17	a/-5.77	25	a/-3.08	Sept. 1	a/-3.56
Aug. 2	a/-5.69	26	a/-3.83	9	a/-4.95
14	a/-5.94	27	a/-3.32	23	a/-2.90
Sept. 9	a/-5.72	Apr. 10	a/-3.60	30	a/-3.22
Oct. 7	a/-5.29	May 2	a/-3.21	Oct. 2	-2.64
Nov. 7	a/-5.23	June 5	a/-2.93	30	a/-1.32
17	a/-5.08	26	a/-5.45	Nov. 30	a/-1.63
Dec. 27	a/-5.46	July 16	a/-6.69	Dec. 7	-1.22
Jan. 15, 1934	a/-5.32	31	a/-6.30	23	a/-1.07
Feb. 19	a/-5.46				

a/ By Salt Lake City Corporation.

(D-2-1)23db. Herbert S. Auerbach, Holladay, Salt Lake County. Diameter 15 inches, depth 201 feet. Measuring point, top of casing, 1.0 foot above land surface and 4,679.95 feet above sea level. Field no. 335; Salt Lake City no. 1075. A recording gage has been maintained on this well.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 23, 1932	a/-33.30	June 12, 1933	-24.72	Apr. 11, 1935	c/-46.06
Aug. 1	-34.23	July 1	-31.43	May 2	c/-43.48
18	b/-35.68	15	-34.14	June 6	c/-30.66
Sept. 1	-36.35	Aug. 1	-36.86	13	c/-27.52
7	-36.86	15	-38.60	July 18	c/-37.82
10	-34.92	28	b/-38.73	25	c/-35.49
15	-42.	Oct. 7	-39.87	Aug. 16	c/-36.63
22	-38.90	Nov. 13	-43.77	Sept. 19	c/-41.95
29	-40.89	Dec. 21	-47.70	Nov. 6	c/-47.41
Oct. 6	-40.78	Jan. 11, 1934	-49.86	12	c/-47.05
13	a/-41.31	Feb. 2	a/-51.95	Dec. 2	c/-49.20
25	-41.90	15	-53.52	Jan. 6, 1936	c/-53.30
Nov. 1	-42.55	Mar. 1	-57.32	Feb. 3	c/-62.71
15	-44.45	14	-62.60	11	c/-66.92
Dec. 1	-46.15	15	-58.80	24	c/-68.79
15	-48.10	20	-61.26	Mar. 10	c/-46.31
Jan. 1, 1933	-49.85	Apr. 3	b/-53.60	Apr. 2	c/-37.73
15	-51.55	26	-49.65	May 4	c/-26.47
Feb. 2	-54.3	May 24	-42.42	18	c/-21.55
9	-56.9	June 21	-39.90	June 22	c/-27.83
23	-62.1	July 9	c/-37.87	July 9	c/-30.58
Mar. 4	-71.5	Aug. 6	c/-43.25	Aug. 14	c/-34.56
9	-74.9	16	-44.67	29	c/-30.70
20	-49.2	Sept. 5	c/-48.35	Sept. 8	c/-37.25
Apr. 1	-44.00	Oct. 4	c/-51.23	21	c/-36.50
13	-41.3	30	c/-55.56	Oct. 6	c/-39.98
May 1	-39.70	Nov. 17	c/-65.0		d/
18	-39.03	Jan. 16, 1935	c/-76.		
June 1	-27.85	Mar. 21	c/-48.35		

(D-2-5)20cc. Lee Bros., Hailstone, Wasatch County. Diameter 24 inches, depth 29 feet. Measuring point, top of curb, 1.0 foot above land surface. Depth to water: Oct. 27, 1936, 28.70 feet.

(D-2-5)3lad. Harry Morris, Hailstone, Wasatch County. Diameter 36 inches, depth 17 feet. Measuring point, top of platform, 0.5 foot above land surface. Depth to water: Oct. 27, 1936, 8.55 feet.

(D-3-1)5cd. Sam Jones, Sandy, Salt Lake County. Diameter 35 inches, depth 19.5 feet. Measuring point, top of concrete curb, 0.5 foot above land surface. Field no. 17; Salt Lake City no. 1266.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 19, 1931	-11.05	Nov. 1, 1932	-10.92	Dec. 13, 1935	c/-12.70
Sept. 14	-11.65	Dec. 7	-12.15	Feb. 11, 1936	c/-12.90
Oct. 15	-12.77	Jan. 6, 1933	-12.87	27	-11.99
Nov. 5	-13.46	Mar. 7	-13.63	Mar. 16	c/-11.66
Jan. 6, 1932	-16.00	May 8	-13.87	Apr. 10	c/- 9.76
Feb. 16	-16.70	July 6	- 7.17	13	- 9.99
Mar. 15	-17.98	May 29, 1934	-11.82	May 29	c/- 6.53
Apr. 18	-16.20	Oct. 31	-16.15	June 6	- 5.27
May 9	-14.89	May 10, 1935	c/-15.13	26	c/- 4.60
June 7	-10.90	July 13	c/- 6.25	July 23	- 5.37
July 20	- 5.02	Aug. 24	c/- 8.19	Aug. 7	c/- 5.97
Aug. 9	- 5.66	Oct. 10	c/-10.60	Oct. 2	- 8.90
Sept. 6	- 7.91	29	-10.98	Dec. 7	-11.67
Oct. 3	- 9.57				

a/ Recording gage installed.
b/ Recording gage removed.
c/ By Salt Lake City Corporation.

d/ When next visited, the well cap had been removed and a number of large rocks dropped in casing which plugged the well.

(C-3-5)29ca. Miles Clyde, Heber, Wasatch County. Diameter 48 inches, depth 14.5 feet. Measuring point, top of platform, 1.0 foot above land surface. Depth to water: Oct. 27, 1936, 5.68 feet.

(D-3-21)17ac. Martha D. Bingham, Vernal, Uinta County. Diameter 8 inches. Measuring point, top of casing, 2.5 feet above land surface. Pressure head: Nov. 8, 1935, 7.6 feet (found flowing).

(D-3-21)30dc. Ralph G. Alexander, Vernal, Uinta County. Diameter 8 inches, depth 185 feet. Measuring point, top of casing, 1.4 feet above land surface. Pressure head: Nov. 8, 1935, 4.4 feet (found flowing).

(D-4-4)14cc. Drought Relief Administration, at southwest corner of town-hall lot. Charleston, Wasatch County. Diameter 10 inches, depth 325 feet. Measuring point, top of casing, 3.0 feet below land surface. Depth to water: Nov. 6, 1935, 1.44 feet; Oct. 27, 1936, well flowing and could not measure pressure.

(D-4-21)28da. Drought Relief Administration, on deserted (Glines) schoolhouse grounds. Vernal, Uinta County. Diameter $8\frac{1}{4}$ inches, depth 670 feet. Depth to water: Nov. 8, 1935, 36.88 feet; October, 1936, well plugged with debris, could not measure.

(D-5-1)7ac. --- Radmal, Lehi, Utah County. Diameter $1\frac{1}{2}$ inches. Measuring point, top of coupling, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-9.65	Sept. 16, 1936	-6.03	Sept. 24, 1936	-6.09
Sept. 11, 1936	-5.64	17	-6.05	26	-6.14
14	-5.91	19	-5.97	28	-6.16
15	-5.95	21	-6.02	Dec. 23	-5.50

(D-5-1)7ca1. Geo. Jacobs, Lehi, Utah County. Diameter 2 inches, depth 95 feet. Measuring point, top of casing, at land surface. First well west of house. Found flowing prior to all measurements except Sept. 11, 1935.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 5, 1934	a/+2.75	Sept. 12, 1936	+1.27	Sept. 24, 1936	+1.48
Sept. 11, 1935	-2.44	14	+0.77	26	+1.65
July 21, 1936	+0.65	15	+0.65	28	+1.83
Aug. 9	+0.85	Sept. 16	+0.10	30	+2.05
Sept. 2	+1.13	17	+0.22	Oct. 3	+2.25
5	+1.05	19	+0.38	Dec. 23	+5.7
10	+1.15	21	+0.58		

(D-5-1)7ca2. Geo. Jacobs, Lehi, Utah County. Diameter 2 inches, depth 103(?) feet. Measuring point, top of casing, at land surface. Second well west of house. Pressure head: Sept. 11, 1935, 2.52 feet (found flowing).

(D-5-1)7ca3. Geo. Jacobs, Lehi, Utah County. Diameter 2 inches, depth 100(?) feet. Measuring point, top of 1-inch casing, 0.75 foot above land surface. Third well west of house. Depth to water: Sept. 11, 1935, 5.47 feet.

(D-5-1)7ca4. Geo. Jacobs, Lehi, Utah County. Diameter 2 inches, depth 40 feet. Measuring point, top of casing, 0.1 foot above land surface. About 150 feet southwest of house. Depth to water: Sept. 11, 1935, 4.08 feet; Sept. 12, 1936, 0.84 foot; Sept. 16, 1936, 1.54 feet.

(D-5-1)8dc. Drought Relief Administration, Lehi, Utah County. Diameter 14 inches, depth 240 feet. Measuring point, bottom of inspection opening in turbine pump, 1.1 feet above land surface. Well drilled for Lehi Irrigation Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 12, 1935	-22.77	Sept. 2, 1936	-18.57	Sept. 19, 1936	-18.94
Oct. 23	-20.07	5	-19.04	21	-18.65
July 21, 1936	-19.47	7	-19.09	26	-17.35
Aug. 9	-18.93	10	-18.91	28	-17.14
18	-18.11	12	-18.81	30	-17.09
28	-18.92	17	a/-19.53	Dec. 22	-12.25

(D-5-1)9cc. E. N. Webb, 388 north 1st East St., Lehi, Utah County. Diameter 1½ inches, depth 150 feet. Measuring point, top of casing, 0.5 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-10.42	Aug. 9, 1936	-3.85	Sept. 16, 1936	-4.51
27	-8.68	18	-2.05	17	-4.14
Oct. 23	-6.85	28	-4.10	19	-4.01
Nov. 9	-4.64	Sept. 2	-3.16	21	-3.62
19	-3.98	3	-3.53	24	-2.50
Dec. 10	-3.05	5	-4.36	26	-2.20
Jan. 2, 1936	-2.55	7	-4.18	28	-2.05
22	-2.62	10	-4.02	30	-2.11
Mar. 2	-1.50	11	-3.86	Oct. 3	-2.03
May 2	-3.55	12	-3.93	19	-0.90
June 20	-4.33	13	-4.23	Dec. 1	+2.51
July 6	-5.74	14	-3.85	22	+2.65
18	-4.35	15	-4.21		

(D-5-1)9cd1. Hiram Gray, 612 north 3d. East St., Lehi, Utah County. Diameter 1½ inches, depth 250 feet. Measuring point, top of tee, 0.5 foot above land surface. Depth to water: Sept. 18, 1935, 4.36 feet; June, 1936, owner reported well began flowing. Pressure head: Sept. 11, 1936, 3.57 feet; Dec. 22, 6.2 feet.

(D-5-1)9cd2. Raker estate, about 65 feet east of 3d East St., just south of 4th North St., Lehi, Utah County. Diameter 2 inches. Measuring point, top of horizontal outlet of tee, 2.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-5.49	Aug. 9, 1936	-2.80	Sept. 16, 1936	-3.45
Oct. 23	-4.68	29	-3.29	19	-3.50
July 18, 1936	-2.83	Sept. 11	-3.43	Dec. 22	-2.62

(D-5-1)9cd3. Lehi Irrigation Co. & Lehi City, at east side of street about 346 North 4th East St., Lehi, Utah County. Diameter 4 inches, depth 750 feet. Measuring point, top of casing, 1.5 feet above land surface. Pressure head: Sept. 11, 1936, 32.0 feet (found flowing); Dec. 22, 1936, 32.5 feet.

(D-5-1)9db. City of Lehi, Lehi, Utah County. Diameter 12 inches, depth 208 feet. Measuring point, top of pump base, 3.1 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 30, 1935	-24.50	Oct. 7, 1935	-22.87	Dec. 13, 1935	b/-16.96
Aug. 30	-23.88	23	-22.28	Jan. 2, 1936	b/-16.50
Sept. 13	-24.31	Dec. 3	b/-18.15	22	b/-16.48

a/ Pumped well between Sept. 12 and Sept. 17, 1936.

b/ Water being introduced into well from Lehi City's surface supply by running water into discharge pipe of pump.

(D-5-1)9db.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Mar. 2, 1936	b/-13.85	Sept. 7, 1936	-17.41	Sept. 24, 1936	-16.13
May 2	b/-18.29	10	-17.28	26	-15.84
June 21	-17.88	12	-17.16	30	-15.91
July 18	-17.82	14	-17.13	Oct. 3	-15.74
Aug. 9	-17.35	16	-17.49	19	-15.12
Sept. 2	-16.53	17	-17.33	Dec. 1	b/- 8.84
3	-16.85	19	-17.34	22	b/-11.48
5	-17.53	21	-17.05		

(D-5-1)9dd. John W. Brown, Lehi, Utah County. Diameter $1\frac{1}{2}$ inches, depth 140 feet. Measuring point, top of casing, 0.25 foot above land surface. Found flowing prior to all measurements of pressure head.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	-3.63	Sept. 3, 1936	+5.6	Sept. 17, 1936	+5.25
Oct. 23	-1.40	5	+5.0	19	+5.1
Nov. 9	+0.20	7	+5.0	21	+5.25
Dec. 10	+1.49	10	+5.1	24	+6.00
July 18, 1936	+4.9	12	+5.25	26	+6.35
Aug. 9	+5.5	14	+5.6	30	+6.15
Sept. 2	+5.6	16	+5.2	Dec. 22	+8.9

(D-5-1)15bb. Charlotte M. Britton, Lehi, Utah County. Diameter 2 inches, depth 160 feet. Measuring point, top of tee, 1.25 feet above land surface. Pressure head: Sept. 20, 1935, 9.10 feet.

(D-5-1)15bd1. Eugene Briggs, north of house by highway, Lehi, Utah County. Diameter 2 inches, depth 155 feet. Measuring point, top of tee, 1.0 foot above land surface. Pressure head: Sept. 20, 1935, 14.85 feet.

(D-5-1)15bd2. Eugene Briggs, about 1,000 feet northwest of house, by highway, Lehi, Utah County. Diameter 2 inches, depth 157 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 20, 1935	c/+14.65	Aug. 9, 1936	c/+24.5	Sept. 17, 1936	+24.65
Oct. 23	+16.75	Sept. 2	c/+24.5	19	+24.45
Nov. 19	+18.05	3	+24.65	21	+24.2
Dec. 10	+18.9	5	+23.9	24	+24.85
Jan. 2, 1936	+19.1	7	+24.65	26	+25.45
22	+19.25	10	+24.65	30	+25.2
Mar. 2	+20.2	12	+24.25	Oct. 19	+25.9
May 2	+19.7	14	+24.8	Dec. 1	+27.4
June 21	+23.4	16	+24.55	22	+27.2
July 18	c/+24.5				

(D-5-1)15ca. Eugene Briggs, Lehi, Utah County. Diameter 4 inches, depth 175 feet. Measuring point, top of ell, 1.0 foot above land surface. Pressure head: Sept. 20, 1935, 30.8 feet.

(D-5-1)15ddl. Heber Barratt, American Fork, Utah County. Diameter 2 inches, depth 180 feet. Measuring point, top of ell, 1.0 foot above land surface. Pressure head: Sept. 11, 1936, 22.9 feet; Dec. 22, 1936, 24.7 feet.

(D-5-1)15dd2. Heber Barratt, American Fork, Utah County. Diameter 2 inches, depth 180 feet. Measuring point, top of tee, 1.0 foot above land surface. Pressure head: Sept. 11, 1936, 22.9 feet.

b/ Water being introduced into well from Lehi City's surface supply by running water into discharge pipe of pump.

c/ Found flowing.

(D-5-1)16aa. Jacob Hunt, Lehi, Utah County. Diameter 4 inches. Measuring point, top of ell, 1.9 feet above land surface. Pressure head: Sept. 18, 1935, 14.8 feet (found flowing); Sept. 11, 1936, 23.3 feet; Dec. 22, 1936, 29.0 feet.

(D-5-1)16ab1. G. G. Robinson, Lehi, Utah County. Diameter 2 inches. Measuring point, top of casing, 1.25 feet above land surface. Depth to water: Sept. 18, 1935, 1.46 feet. Pressure head: Sept. 11, 1936, 1.97 feet (found flowing); Dec. 22, 1936, 3.07 feet (found flowing).

(D-5-1)16ab2. G. G. Robinson, Lehi, Utah County. Diameter 2 inches, depth 190 feet. Measuring point, top of tee, 1.0 foot above land surface. Pressure head: Sept. 18, 1935, 14.45 feet (found flowing); Sept. 11, 1936, 23.25 feet (found flowing).

(D-5-1)16ab3. Lehi Roller Mills Co., on west side of mill, Lehi, Utah County. Diameter 2 inches, depth 225 feet. Measuring point, top of 1½-inch outlet pipe, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	+13.15	Sept. 7, 1936	+22.1	Sept. 21, 1936	+21.7
Oct. 23	+17.10	10	+21.8	24	+23.4
July 18, 1936	+21.7	12	+21.35	26	+23.65
Aug. 9	+22.5	14	+22.65	28	+23.75
Sept. 2	+21.8	16	+21.7	30	+23.2
3	+22.1	17	+21.8	Oct. 3	+23.7
5	+21.0	19	+21.55	Dec. 22	

(D-5-1)16bb. Martha Ball, 211 East Main St., Lehi, Utah County. Diameter 2 inches, depth 145 feet. Measuring point, top of tee, 1.2 feet above land surface. Found flowing through garden hose prior to all measurements to and including Sept. 24, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 1, 1936	+8.85	Sept. 14, 1936	+9.15	Sept. 24, 1936	+10.15
3	+9.25	15	+9.0	26	+10.55
5	+8.4	16	+8.85	28	+10.6
7	+8.75	17	+9.0	30	+10.55
10	+8.9	19	+9.05	Oct. 3	+10.7
12	+8.95	21	+9.25	Dec. 22	+16.55

(D-5-1)16bc1. Elmer Jackson, in front yard at 60 East 2d South St., Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of tee, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	a/+0.67	Sept. 13, 1934	b/+0.33	Oct. 5, 1934	b/+3.66
26	a/+0.61	20	b/+1.37	Sept. 14, 1935	+1.86
27	a/+1.22	25	b/+3.0	July 18, 1936	c/+6.4
28	a/+0.93				

(D-5-1)16bc2. Mrs. Clifton Harper, about 200 feet west and 100 feet north from intersection of 1st South St., and 2d East St., Lehi, Utah County. Diameter 2 inches. Measuring point, top of ell, 1.2 feet above land surface. Pressure head: Aug. 18, 1936, 9.9 feet (found flowing).

a/ By R. Boden, Drought Relief Administration.

b/ By Borg & Neff, Drought Relief Administration.

c/ Found flowing.

(D-5-1)16bd1. Dean Van Wagner, Lehi, Utah County. Diameter 4 inches, depth 200 feet. Measuring point, top of ell, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	+13.9	Sept. 2, 1936	+20.8	Sept. 10, 1936	+20.5
July 21, 1936	+20.35	6	a/+19.1	12	+20.4
Aug. 9	+20.85	7	+20.5	Dec. 22	+27.8
Sept. 1	+20.6				

(D-5-1)16bd2. Dean Van Wagner, Lehi, Utah County. Diameter 1½ inches. Measuring point, top of casing, 0.2 foot above land surface. Recording gage operated on this well between Sept. 1 and Oct. 14, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 1, 1936	+20.4	Sept. 21, 1936	+19.25	Oct. 8, 1936	+21.0
3	+20.35	26	+21.4	14	+22.2
5	+19.4	Oct. 3	+21.0	19	+23.95
8	+20.0	7	+21.35	Dec. 22	+28.6
15	+21.0				

(D-5-1)16cd. James Peterson, about 150 feet east of road, Lehi, Utah County. Diameter 2 inches. Measuring point, top of ell, 1.1 feet above land surface. Found flowing prior to all measurements except Dec. 23, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	+28.1	Sept. 7, 1936	+34.75	Sept. 21, 1936	+35.3
July 21, 1936	+34.0	10	+35.0	24	+35.9
Aug. 9	+35.9	12	+34.3	26	+36.25
Sept. 2	+34.5	14	+35.5	30	+36.4
3	+34.6	16	+35.5	Dec. 23	+45.0
5	+33.6	19	+35.45		

(D-5-1)16dd. J. A. Holdaway, Lehi, Utah County. Diameter 5 inches, depth 158 feet. Measuring point, top of tee, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 18, 1935	+27.9	Sept. 7, 1936	+36.4	Sept. 19, 1936	+36.9
Oct. 23	+31.95	10	+36.25	21	+36.65
July 21, 1936	+36.5	12	a/+34.2	24	+37.75
Aug. 9	+37.1	14	+37.3	30	+38.1
Sept. 5	a/+33.5	16	+37.1	Dec. 22	+43.2

(D-5-1)17aa. Reed Wilkins, 96 North 2d West St., Lehi, Utah County. Diameter 1½ inches, depth 150 feet. Measuring point, top of bushing, 0.75 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 14, 1934	b/-12.11	Sept. 5, 1936	-5.17	Sept. 19, 1936	-4.74
20	b/- 9.95	7	-4.89	21	-4.45
25	b/- 8.28	10	-4.70	24	-3.56
Oct. 5	b/- 8.11	12	-4.64	26	-3.22
Sept. 14, 1935	- 9.96	13	-5.15	28	-2.99
July 21, 1936	- 5.57	14	-4.67	30	-3.07
Aug. 9	- 4.43	15	-4.68	Oct. 3	-3.03
Sept. 2	- 4.25	16	-5.55	Dec. 22	+2.63
3	- 4.41	17	-4.88		

a/ Found flowing.

b/ By Borg and Neff, Drought Relief Administration.

(D-5-1)17ab. Mary Ann Southwick, 392 West 1st North St., Lehi, Utah County. Diameter $1\frac{1}{2}$ inches, depth 200 feet. Measuring point, top of bushing on reducer, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 20, 1935	-9.40	Aug. 9, 1936	-3.68	Sept. 17, 1936	-4.29
27	-7.98	Sept. 2	-3.57	19	-4.15
Oct. 23	-5.86	5	-4.48	21	-3.85
Nov. 9	-3.72	7	-4.22	24	-3.02
Dec. 10	-1.78	10	-4.09	26	-2.69
Jan. 2, 1936	-1.37	12	-3.94	28	-2.46
22	-1.11	12	-4.19	30	-2.40
Mar. 2	-0.26	13	-4.64	Oct. 3	-2.52
May 2	-2.52	14	-4.09	19	-0.92
June 22	-4.37	15	-4.08	Dec. 1	+3.12
July 18	-4.34	16	-5.22	22	+3.33

(D-5-1)17ac1. Forrest Fox, Lehi, Utah County. Diameter $1\frac{1}{2}$ inches. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Sept. 20, 1935, 3.05 feet.

(D-5-1)17ac2. Alice Holmstead, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 12, 1935	-1.67	Sept. 3, 1936	+3.37	Sept. 17, 1936	a/+2.95
20	-2.13	5	+2.66	19	+3.08
25	-1.41	7	+3.05	21	+3.40
27	-0.64	10	a/+3.18	24	+4.18
Oct. 23	+1.85	12	+3.32	26	+4.54
Nov. 9	+4.45	12	+3.17	28	+4.89
Dec. 10	+6.90	13	+2.59	30	+5.02
July 18, 1936	+2.17	14	+3.13	Oct. 3	+5.00
Aug. 9	a/+3.65	15	+3.11	19	+6.65
Sept. 2	+3.33	16	+2.13	Dec. 22	+11.0

(D-5-1)17ac3. J. C. Baker, 110 South 5th West St., Lehi, Utah County. Diameter $1\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1934	b/-2.46	Sept. 25, 1934	b/+1.58	Sept. 12, 1935	-0.01
20	b/-0.27	Oct. 5	b/+2.25		

(D-5-1)17ac4. Nola Beverly, 487 West 1st South St., Lehi, Utah County. Diameter 2 inches, depth 160 feet. Measuring point, top of casing, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	c/-3.92	July 28, 1934	c/-2.50	Sept. 25, 1934	b/-0.24
26	c/-4.10	Sept. 14	b/-4.00	Oct. 5	b/+1.21
27	c/-2.41	20	b/-1.64	Sept. 12, 1935	-1.63

a/ Found flowing through garden hose.

b/ By Borg & Neff, Drought Relief Administration.

c/ By R. Boden, Drought Relief Administration.

(D-5-1)17ac5. S. F. Littleford, 211 South 5th West St., Lehi, Utah County. Diameter 3 inches, depth 160 feet. Measuring point, top of rim on horizontal outlet from lower tee, 0.5 foot above land surface. Recording gage operated on this well from Aug. 27 to Oct. 10, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	a/-0.77	Aug. 18, 1936	+8.7	Sept. 16, 1936	+5.66
26	a/- .97	27	+6.3	18	+6.24
28	a/+ .52	30	+5.63	20	+6.21
Sept. 13	b/- .60	Sept. 3	+6.41	29	+7.98
20	b/+1.75	6	+5.72	Oct. 2	+7.82
25	b/+3.0	8	+6.16	5	+8.20
Oct. 5	b/+3.75	12	+6.32	8	+7.64
Sept. 12, 1935	+1.40	13	+5.69	19	+9.84
Sept. 21, 1936	+5.2	14	+6.17	Dec. 22	+14.95
Aug. 9	+7.0				

(D-5-1)17ac6. S. E. Littleford, 431 West 2d South St., Lehi, Utah County. Diameter 2 inches, depth 158 feet. Measuring point, top of tee, 0.4 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	a/-0.24	Sept. 13, 1934	b/-0.31	Sept. 12, 1935	+2.09
26	a/-0.37	20	b/+2.13	July 21, 1936	c/+6.1
27	a/+1.14	25	b/+4.01	Aug. 18	c/+9.35
28	a/+0.93	Oct. 5	b/+4.18		

(D-6-1)17ac7. John Jackson, 256 South 4th West St., Lehi, Utah County. Diameter 2 inches, depth 148 feet. Measuring point, top of tee, 0.25 foot above land surface. Pressure head: Sept. 13, 1934, 0.4 foot, by Borg and Neff, Drought Relief Administration; Sept. 12, 1935, 2.35 feet.

(D-5-1)17ac8. Lee Stewart, 290 South 5th West St., Lehi, Utah County. Diameter 2 inches. Measuring point, top of tee, 2.5 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1934	a/+0.25	Sept. 25, 1934	a/+4.34	Sept. 12, 1935	d/+2.8+
20	a/+1.50	Oct. 5	a/+4.50		

(D-5-1)17ad1. A. E. Adams, 217 South 1st West St., Lehi, Utah County. Diameter 1½ inches, depth 150 feet. Measuring point, top of pump base, 3.2 feet above land surface. Depth to water: July 30, 1935, 4.10 feet.

(D-5-1)17ad2. M. S. Lott, 279 South 1st West St., Lehi, Utah County. Diameter 2 inches, depth 196 feet. Measuring point, top of tee, 1.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 30, 1935	c/+2.25	Nov. 19, 1935	+11.0	June 20, 1936	c/+7.75
Aug. 30	c/+3.50	Dec. 10	+12.2	July 18	c/+8.5
Sept. 13	c/+2.89	Jan. 2, 1936	+12.8	Aug. 9	c/+9.2
Oct. 7	c/+4.7	22	+12.7	Sept. 2	c/+8.65
23	+6.85	Mar. 2	+13.75	3	c/+8.8
Nov. 9	+9.7	May 2	c/+10.75	5	+8.5

a/ By R. Boden, Drought Relief Administration.

b/ By Borg and Neff, Drought Relief Administration.

c/ Found flowing.

d/ Well fittings leaking badly; measurement poor.

(D-5-1)17ad2.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 7, 1936	c/+8.15	Sept. 16, 1936	c/+8.3	Sept. 28, 1936	c/+10.35
10	c/+8.35	17	+8.7	30	c/+10.25
12	c/+8.5	19	c/+8.75	Oct. 3	+10.25
13	c/+8.45	21	c/+8.9	19	+12.15
14	c/+8.8	24	c/+9.7	Dec. 1	+17.2
15	c/+8.6	26	c/+10.1	22	+17.35

(D-5-1)17ad3. Heber C. Comer, 218 South 2d West St., Lehi, Utah County. Diameter 4 inches, depth 303 feet. Measuring point, top of tee, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 14, 1935	+14.05	Sept. 3, 1936	+20.9	Sept. 19, 1936	+23.35
Oct. 23	+16.10	5	+20.8	21	+23.55
Nov. 9	+17.5	7	+20.95	24	+23.2
Dec. 10	+18.75	10	+21.55	26	+23.0
Jan. 2, 1936	+19.75	12	+22.25	28	+23.35
Mar. 2	+21.0	13	+22.4	30	+22.15
May 2	+20.2	14	+22.4	Oct. 3	+23.55
June 21	+19.0	15	+21.95	19	+22.35
July 21	+18.1	16	+22.1	Dec. 1	+27.25
Aug. 9	+21.55	17	+22.2	22	+27.4
Sept. 2	+22.0				

(D-5-1)17ca. Ralph Smith, Lehi, Utah County. Diameter 4 inches, depth 400 feet. Measuring point, top of cap on casing, 0.6 foot above land surface. Recording gage operated on this well from July 25 to Oct. 3, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	c/+ 3.8	Aug. 14, 1936	+10.95	Sept. 6, 1936	+ 9.0
July 21, 1936	c/+ 7.25	16	+10.7	8	+ 8.2
25	c/+ 7.6	20	+11.5	11	+10.1
27	+10.0	26	+11.45	15	+ 9.5
30	+ 9.5	31	+ 9.55	25	+11.6
Aug. 5	+11.0	Sept. 2	+10.6	27	+11.3
8	+10.3	4	+ 8.5	Oct. 3	+11.8

(D-5-1)17cd1. Odell Peterson, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.25 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1934	b/- 3.91	July 18, 1936	c/+ 1.25	Sept. 19, 1936	c/+ 1.78
20	b/- 1.33	Aug. 9	c/+ 2.77	21	c/+ 1.87
25	b/- 0.67	Sept. 2	c/+ 1.57	24	c/+ 2.23
Oct. 5	b/+ 0.21	5	c/+ 1.70	26	c/+ 2.43
Sept. 13, 1935	- 1.58	7	c/+ 1.71	28	c/+ 2.58
17	- 1.59	10	c/+ 1.88	30	c/+ 2.48
Oct. 23	c/+ 2.08	12	c/+ 1.93	Oct. 3	c/+ 3.27
Nov. 9	c/+ 5.8	14	c/+ 1.72	19	c/+ 3.05
Dec. 10	+ 9.4	15	c/+ 1.65	Dec. 1	+11.0
Jan. 2, 1936	+11.35	16	c/+ 0.85	23	c/+11.85
Mar. 2	+11.85	17	c/+ 1.40		

b/ By Borg and Neff, Drought Relief Administration.
c/ Found flowing.

(D-5-1)17cd2. F. P. Martens, in northwest corner of property, Lehi, Utah County. Diameter 2 inches, depth 200 feet. Measuring point, top of casing, 2.0 feet above land surface. Pressure head: Sept. 14, 1935, 2.99 feet.

(D-5-1)17cd3. F. P. Martens, in northeast corner of reservoir, Lehi, Utah County. Diameter 2 inches, depth 200 feet. Measuring point, top of casing, 0.5 foot above land surface. Pressure head: Sept. 14, 1935, 6.15 feet.

(D-5-1)17cd4. F. P. Martens, west one of two wells in southeast corner of reservoir, Lehi, Utah County. Diameter 2 inches, depth 200 feet. Measuring point, top of coupling, 0.5 foot above land surface. Pressure head: Sept. 14, 1935, 5.40 feet.

(D-5-1)17cd5. F. P. Martens, east one of two wells in southeast corner of reservoir, Lehi, Utah County. Diameter 2 inches, depth 200 feet. Pressure head: Sept. 14, 1935, 5.45 feet.

(D-5-1)17dal. James B. Gray, 328 South 2d West St., Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of upper tee, 1.8 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1934	$\frac{a}{-1.26}$	Sept. 25, 1934	$\frac{a}{+1.07}$	Sept. 14, 1935	-0.89
20	$\frac{a}{+0.16}$	Oct. 5	$\frac{a}{+2.11}$		

(D-5-1)17da2. Azor Wanlass, 197 West 4th South St., Lehi, Utah County. Diameter 2 inches, depth 147 feet. Measuring point, top of lower tee, 0.25 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	$\frac{b}{+1.14}$	Sept. 13, 1934	$\frac{a}{+0.29}$	Sept. 14, 1935	+2.58
26	$\frac{b}{+0.85}$	20	$\frac{a}{+2.31}$	Sept. 11, 1936	+7.35
27	$\frac{b}{+1.54}$	25	$\frac{a}{+3.50}$	Dec. 24	+17.6
28	$\frac{b}{+1.50}$	Oct. 5	$\frac{a}{+4.50}$		

(D-5-1)17db1. Julia T. Guernsey, 374 South 5th West St., Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of tee, 0.9 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	$\frac{b}{+1.93}$	Sept. 13, 1934	$\frac{a}{+3.22}$	Sept. 12, 1935	+4.05
26	$\frac{b}{+1.49}$	20	$\frac{a}{+4.41}$	Sept. 11, 1936	$\frac{c}{+8.9}$
27	$\frac{b}{+2.93}$	25	$\frac{a}{+5.6}$	Dec. 23	+18.4
28	$\frac{b}{+2.85}$	Oct. 5	$\frac{a}{+5.93}$		

(D-5-1)17db2. Earl Jacobs, 492 South 5th West St., Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of outlet, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	$\frac{b}{+1.58}$	July 28, 1934	$\frac{b}{+2.56}$	Sept. 25, 1934	$\frac{a}{+6.33}$
26	$\frac{b}{+1.40}$	Sept. 13	$\frac{a}{+3.16}$	Oct. 5	$\frac{a}{+7.0}$
27	$\frac{b}{+1.29}$	20	$\frac{a}{+5.16}$	Sept. 12, 1935	+6.15

$\frac{a}{/}$ By Borg and Neff, Drought Relief Administration.

$\frac{b}{/}$ By R. Boden, Drought Relief Administration.

$\frac{c}{/}$ Found flowing.

(D-5-1)17dc2. Geo. Cox, Lehi, Utah County. Diameter 3 inches, depth 334 feet. Measuring point, top of outlet pipe, 2.0 feet above land surface. Pressure head: Nov. 9, 1935, 34.25 feet.

(D-5-1)17dc3. Geo. Cox, Lehi, Utah County. Diameter 2 inches, depth 210 feet. Measuring point, top of ell, 1.0 foot above land surface. Pressure head: Nov. 9, 1935, 15.15 feet.

(D-5-1)17dc4. Geo. Cox, Lehi, Utah County. Diameter 3 inches, depth 328 feet. Measuring point, top of ell, 2.0 feet above land surface. Pressure head: Nov. 9, 1935, 34.80 feet.

(D-5-1)17dc5. F. P. Martens, in front yard, Lehi, Utah County. Diameter 2 inches, depth 200 feet. Measuring point, top of tee, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	<u>a</u> /+2.42	July 28, 1934	<u>a</u> /+2.67	Sept. 25, 1934	<u>b</u> /+2.63
26	<u>a</u> /+2.37	Sept. 13	<u>b</u> /+1.50	Oct. 5	<u>b</u> /+5.0
27	<u>a</u> /+2.56	20	<u>b</u> /+2.25	Sept. 14, 1935	+3.55

(D-5-1)18aa. Eugene Webb, Lehi, Utah County. Diameter 2 inches, depth 285 feet. Measuring point, top of casing, 0.75 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	-3.35	Sept. 13, 1936	<u>c</u> /0.00	Sept. 21, 1936	<u>c</u> /+0.19
Oct. 23	-0.25	14	<u>c</u> /-0.10	24	<u>c</u> /+0.60
Sept. 1, 1936	<u>c</u> /0.00	15	<u>c</u> /-0.15	26	<u>c</u> /+0.72
5	<u>c</u> /+0.15	16	-0.42	28	<u>c</u> /+0.60
7	<u>c</u> /-0.01	17	-0.49	30	<u>c</u> /+0.95
10	<u>c</u> /+0.03	19	<u>c</u> /-0.07	Dec. 24	<u>c</u> /+5.0
12	<u>c</u> /+0.15				

(D-5-1)18ab1. Wayne Carson, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 2.0 feet above land surface. Recording gage operated on this well from Aug. 28 to Oct. 3, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 18, 1936	<u>d</u> /+3.37	Sept. 7, 1936	+2.90	Sept. 16, 1936	+1.73
28	+3.18	12	+3.36	21	+2.78
30	+2.84	13	+2.64	Oct. 3	+4.41
Sept. 4	+3.14	14	+2.95	Dec. 23	+11.3

(D-5-1)18ab2. Moroni Sabey, Lehi, Utah County. Diameter 1½ inches, depth 150(?) feet. Measuring point, top of casing, 1.25 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 25, 1934	<u>a</u> /-3.04	Sept. 20, 1934	<u>b</u> /+0.25	Sept. 1, 1936	+2.68
26	<u>a</u> /-3.12	25	<u>b</u> /+0.42	11	+3.10
27	<u>a</u> /-0.90	Oct. 5	<u>b</u> /+1.66	13	+2.40
28	<u>a</u> /-0.38	Sept. 11, 1935	-0.67	16	+1.40
Sept. 13	<u>b</u> /+0.42	July 21, 1936	+2.2	19	+2.47

a/ By R. Boden, Drought Relief Administration.

b/ By Borg and Neff, Drought Relief Administration.

c/ Found flowing through hole in casing or over top of casing.

d/ Found flowing.

(D-5-1)18ab3. Eli Fox, Lehi, Utah County. Diameter 2 inches. Measuring point, top of casing, at land surface. Pressure head: Sept. 20, 1935, 3.65 feet (found flowing); Sept. 11, 1936, 6.8 feet (found flowing); Dec. 24, 1936, 14.7 feet.

(D-5-1)18ac. Clara Webb, Lehi, Utah County. Diameter 2 inches, depth 150 or 180 feet. Measuring point, top of ell, 1 foot south of well, 1.5 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1934	a/-0.30	Sept. 25, 1934	a/+2.71	Sept. 11, 1935	+1.97
20	a/+2.71	Oct. 5	a/+3.5	Sept. 11, 1936	+5.75

(D-5-1)18bc1. Aaron Evans, just south of garage, Lehi, Utah County. Diameter 2 inches, depth 175 feet. Measuring point, top of tee, 2.0 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 11, 1935	+ 8.75	Sept. 5, 1936	+12.25	Sept. 19, 1936	+11.75
Oct. 23	+11.6	10	+12.6	21	+11.65
Nov. 9	+13.7	12	+12.75	24	+12.5
Mar. 2, 1936	+17.4	14	+12.25	26	+12.65
July 21	+12.1	15	+12.1	28	+13.1
Aug. 9	+12.35	16	+12.05	30	+13.25
Sept. 2	+12.4	17	+11.75	Dec. 23	+17.9

(D-5-1)18bc2. Aaron Evans, Lehi, Utah County. Diameter 2 inches, depth 175 feet. Measuring point, top of casing, at land surface. Pressure head: Sept. 11, 1935, 8.95 feet (found flowing); July 18, 1936, 12.2 feet (found flowing).

(D-5-1)18db. Geo. Goats, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.5 foot above land surface. Found flowing prior to all measurements except Dec. 24, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	+0.25	Sept. 12, 1936	+3.00	Sept. 21, 1936	+2.30
July 21, 1936	+1.98	14	+2.57	24	+2.80
Aug. 9	+2.70	15	+2.34	26	+3.00
18	+2.81	16	+1.90	28	+3.22
Sept. 2	+2.46	17	+2.05	30	+3.62
5	+2.60	19	+2.27	Dec. 24	+10.65
10	+2.95				

(D-5-1)19ac. Stanley Clark, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.75 foot above land surface. Found flowing prior to all measurements except Dec. 24, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	+1.85	Sept. 12, 1936	+4.00	Sept. 24, 1936	+3.38
Oct. 23	+3.32	14	+3.85	26	+3.44
July 21, 1936	+3.70	15	+3.75	28	+3.61
Aug. 9	+3.98	16	+3.67	30	+3.78
Sept. 2	+3.50	17	+3.61	Oct. 3	+3.90
5	+3.84	19	+3.62	Dec. 24	+10.5
10	+4.08	21	+3.21		

(D-5-1)19bb. John Smith, Lehi, Utah County. Diameter 2 inches, depth 100 feet. Measuring point, top of tee, 1.5 feet above land surface. Two wells connected to same outlet. Pressure head: Sept. 10, 1935, 2.11 feet (found flowing); Sept. 11, 1936, 8.4 feet (found flowing); Dec. 23, 1936, 14.5 feet (found flowing).

(D-5-1)19dd3. J. Freeman Royle, Lehi, Utah County. Diameter 2 inches, depth 90 feet. Measuring point, top of casing, at land surface. Second from east of four wells along north side of field. 20 feet of casing in well. Pressure head: Sept. 13, 1935, 0.52 foot (found flowing).

(D-5-1)19dd4. J. Freeman Royle, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.25 foot above land surface. Easterly one of four wells along north side of field. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	+6.95	Sept. 14, 1936	+8.25	Sept. 24, 1936	+8.15
Sept. 1, 1936	+7.7	15	+8.3	26	+8.15
5	+8.4	17	+8.2	28	+8.25
10	+8.8	19	+8.15	30	+8.05
12	+8.35	21	+8.0	Dec. 23	a/

(D-5-1)20ab1. Jacob G. Cox, Lehi, Utah County. Diameter 2 inches, depth 152 feet. Measuring point, reference bench mark, nail in stake, 2.5 feet northeast of well, 1.5 feet above land surface. The northwesterly one of four wells at reservoir. Recording gage operated on this well throughout period of record.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 25, 1935	+ 8.05	Mar. 20, 1936	+23.55	July 20, 1936	+11.0
29	+ 7.55	31	+23.7	31	+13.5
Oct. 3	+ 9.0	Apr. 10	+23.75	Aug. 10	+14.15
16	+ 9.6	16	+23.1	22	+18.1
24	+15.1	23	+19.75	31	+12.6
Nov. 4	+15.6	30	+18.2	Sept. 10	+13.15
21	+21.4	May 7	+17.7	20	+13.05
30	+21.9	16	+11.95	30	+13.5
Dec. 10	+22.2	22	+12.3	Oct. 9	+13.3
20	+22.15	25	+10.5	20	+17.4
31	+22.8	27	+11.9	31	+18.1
Jan. 10, 1936	+22.75	June 1	+10.8	Nov. 10	+19.4
20	+22.5	10	+18.85	20	+22.5
31	+22.8	20	+11.6	30	+23.6
Feb. 10	+22.75	30	+ 9.9	Dec. 10	+24.0
20	+23.15	July 7	+ 9.25	20	+23.95
29	+23.6	10	+10.45	31	+25.2
Mar. 9	+24.15	15	+12.3		

(D-5-1)20ab2. Jacob G. Cox, Lehi, Utah County. Diameter 2 inches, depth 154 feet. Measuring point, top of casing, at land surface. The northeasterly one of four wells in reservoir. Pressure head: Sept. 25, 1935, 8.35 feet (found flowing).

(D-5-1)20ab3. Jacob G. Cox, Lehi, Utah County. Diameter 2 inches, depth 158 feet. Measuring point, top of casing, at land surface. The southeasterly one of four wells in reservoir. Pressure head: Sept. 25, 1935, 10.6 feet.

a/ Well has been plugged and has started leaking around outside of well casing.

(D-5-1)20ab4. Jacob G. Cox, Lehi, Utah County. Diameter 3 inches, depth 292 feet. Measuring point, top of flange at end of outlet pipe, 1.0 foot above land surface. The southwesterly one of four wells in reservoir.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 25, 1935	+34.4	Aug. 9, 1936	+42.75	Sept. 19, 1936	+43.9
Oct. 7	+35.4	Sept. 2	+42.75	21	+44.2
22	+35.9	3	+42.5	24	+43.35
Nov. 9	+38.1	5	+41.9	26	+43.15
19	+38.8	7	+42.05	28	+43.35
Dec. 10	+39.8	10	+42.2	30	a/+39.2
Mar. 2, 1936	+41.4	12	+42.7	Oct. 3	+43.3
May 2	+41.3	14	+42.85	19	a/+39.1
June 21	a/+38.25	15	+42.6	Dec. 23	+47.5
July 18	+42.2	16	+42.8		

(D-5-1)20ab5. Jacob G. Cox, 10 feet south of chicken coops, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of tee, 0.5 foot above land surface. Pressure head: Sept. 25, 1935, 10.05 feet.

(D-5-1)20ab6. Jacob G. Cox, just northwest of residence, Lehi, Utah County. Diameter 1½ inches, depth 200 feet. Measuring point, top of ell, 1.3 feet above land surface. Pressure head: Sept. 25, 1935, 8.6 feet.

(D-5-1)20bb1. J. Freeman Royle, in northeast corner of reservoir, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, 0.25 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1934	b/+0.9	Sept. 10, 1936	a/+6.6	Sept. 24, 1936	+7.2
20	b/+2.0	12	a/+6.35	26	+7.35
Sept. 13, 1935	+2.93	15	+7.15	28	+7.25
July 1, 1936	a/+6.1	16	+6.9	30	+7.4
Aug. 9	a/+6.8	17	+6.95	Oct. 3	+8.15
Sept. 2	a/+5.75	19	+6.95	Dec. 24	a/+16.9
5	a/+6.5	21	+7.0		

(D-5-1)20bb2. J. Freeman Royle, in northwest corner of reservoir, Lehi, Utah County. Diameter 2 inches, depth 150 feet. Measuring point, top of casing, at land surface. Pressure head: Sept. 13, 1935, 3.22 feet.

(D-5-1)20bc. A. B. Anderson, on east bank of reservoir, Lehi, Utah County. Diameter 4 inches, depth 151 feet. Measuring point, top of ell, 1.5 feet above land surface. Found flowing prior to all measurements except Sept. 5, Sept. 10 and Dec. 24, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 13, 1935	+ 7.75	Sept. 12, 1936	+10.8	Sept. 24, 1936	+10.8
July 21, 1936	+10.9	14	+10.45	26	+10.8
Aug. 9	+11.05	15	+10.7	28	+10.9
Sept. 2	+10.0	17	+10.6	30	+10.8
5	+11.6	19	+10.5	Dec. 24	+17.9
10	+11.95	21	+10.45		

a/ Found flowing.

b/ By Borg and Neff, Drought Relief Administration.

(D-5-1)20cb. Mrs. Hildebrand Davis, Lehi, Utah County. Diameter 2 inches, depth 180 feet. Measuring point, top of casing, 0.2 foot above land surface. Pressure head: Sept. 14, 1936, 21.75 feet (found flowing); Sept. 15, 1936, 22.05 feet (found flowing); Dec. 24, 1936, 34.0 feet (found flowing).

(D-5-1)20db. C. O. Holmstead, Lehi, Utah County. Diameter 2 inches, depth 164 feet. Measuring point, top of tee, 2.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 17, 1935	+23.2	Sept. 12, 1936	+27.6	Sept. 24, 1936	+28.75
Oct. 23	+28.8	14	+28.3	26	+29.0
July 21, 1936	+28.1	15	+27.7	28	+29.15
Aug. 9	+30.5	16	+27.8	30	+28.65
Sept. 2	+28.0	17	+28.35	Oct. 3	+28.6
5	+28.2	19	+28.4	Dec. 23	+40.9
10	+28.4	21	+28.4		

(D-5-1)20dcl. Mrs. Allen Fiele(?), Lehi, Utah County. Diameter 2 inches, depth 180 feet. Measuring point, top of ell, 1.4 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 2, 1936	+27.1	Sept. 15, 1936	+27.3	Sept. 26, 1936	+28.3
5	+27.5	16	+27.7	28	+27.95
10	+28.4	19	+27.85	30	+29.5
12	+27.65	21	+27.2	Dec. 23	+40.0
14	+26.85	24	+28.3		

(D-5-1)20dc2. Mrs. Allen Fiele, Lehi, Utah County. Diameter 1½ inches, depth 100+ feet. Measuring point, top of coupling, 0.3 foot above land surface. Located 40 feet northeast of house. Pressure head: Sept. 2, 1936, 8.8 feet.

(D-5-1)21ca. Isaac Bone, Lehi, Utah County. Diameter 2 inches. Measuring point, top of tee, 1.0 foot above land surface. Pressure head: Sept. 12, 1936, 47.8 feet; Dec. 23, 1936, 57.5 feet.

(D-5-1)21db. Arthur L. Crawford, Lehi, Utah County. Diameter 2 inches. Measuring point, top of tee, 2.0 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 20, 1935	+17.15	Sept. 10, 1936	+19.25	Sept. 24, 1936	+19.0
Sept. 2, 1936	+18.5	12	+19.45	26	+19.5
3	+18.2	14	+19.55	30	+19.75
5	+18.25	19	+18.95	Dec. 22	+20.75
7	+18.5	21	+18.1		

(D-5-1)22bcl. Lynn Wagstaff, American Fork, Utah County. Diameter 2 inches, depth 55 feet. Measuring point, top of ell, 1.0 foot above land surface. A small leak from cracked casing during all measurements. Pressure head: Sept. 20, 1935, 15.05 feet; July 18, 1936, 18.1 feet; Aug. 9, 13.5 feet; Dec. 22, 19.5 feet. Found flowing at all measurements except Dec. 22, 1936.

(D-5-1)22bc2. Lynn Wagstaff, American Fork, Utah County. Diameter 3 inches, depth 55 feet. Measuring point, top of ell, 2.0 feet above land surface. Center one of three wells just south of road. Pressure head: July 18, 1936, 18.2 feet; Sept. 11, 1936, 18.2 feet (found flowing); Dec. 22, 1936, 18.8 feet.

(D-5-1)22bc3. Lynn Wagstaff, American Fork, Utah County. Diameter 4 inches, depth 187 feet. Measuring point, top of ell, 2.0 feet above land surface. Westerly well of three wells just south of road.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 20, 1935	+43.6	Aug. 9, 1936	<u>a</u> +52.1	Dec. 22, 1936	+59.
July 18, 1936	+50.9	Sept. 11	+53.75		

(D-5-2)29db1. Mark Richins, Pleasant Grove, Utah County. Diameter 2 inches, depth 80 feet. Measuring point, top of casing, 0.2 foot above land surface. The southeasterly one of two wells in front yard. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 30, 1935	+5.30	Dec. 14, 1935	+10.6	June 21, 1936	+11.8
Aug. 30	+4.65	Jan. 22, 1936	+10.75	Aug. 8	+11.05
Oct. 7	+4.11	Mar. 2	+10.75	Oct. 3	+ 9.85
Nov. 19	+6.95	May 2	+11.0	Dec. 1	+15.25

(D-5-2)29db2. Green et. al., Pleasant Grove, Utah County. Diameter 4 inches, depth 80 feet. Measuring point, top of casing, 1.2 feet above land surface. Pressure head: Aug. 30, 1935, 6.2 feet.

(D-5-2)29db3. Drought Relief Administration, Pleasant Grove, Utah County. Diameter 4 inches, depth 289 feet. Measuring point, top of ell, 1.3 feet above land surface. The northerly one of seven wells on east side of road. Drilled for Southfield Irrigation Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 30, 1935	<u>a</u> +14.6	Oct. 7, 1935	<u>a</u> +13.25	Dec. 14, 1935	+15.1
Aug. 30	<u>a</u> +13.9	Nov. 19	+14.25	Jan. 22, 1936	<u>b</u> /

(D-5-2)29db4. Pleasant Grove, Utah County. Diameter 4 inches. Measuring point, top of outlet pipe, 1.5 feet below land surface. The second from north of seven wells on east side of road. Pressure head: Aug. 30, 1935, 7.5 feet.

(D-5-2)29db5. Southfield Irrigation Co., Pleasant Grove, Utah County. Diameter 4 inches, depth 100± feet. Measuring point, top of valve outlet, 1.5 feet below surface. The third from north of seven wells on east side of road. Pressure head: Aug. 30, 1935, 7.9 feet.

(D-5-2)29db6. Southfield Irrigation Co., Pleasant Grove, Utah County. Diameter 4 inches, depth 100± feet. Measuring point, top of valve outlet, 1.5 feet below land surface. The center one of seven wells on east side of road. Pressure head: Aug. 30, 1935, 7.7 feet.

(D-5-2)29db7. Southfield Irrigation Co., Pleasant Grove, Utah County. Diameter 4 inches, depth 100± feet. Measuring point, top of valve outlet, 1.0 foot below land surface. The third from south of seven wells on east side of road. Pressure head: Aug. 30, 1935, 7.7 feet.

(D-5-2)29db8. Southfield Irrigation Co., Pleasant Grove, Utah County. Diameter 4 inches, depth 104± feet. Measuring point, top of gate valve, at land surface. The second from south of seven wells on east side of road. Pressure head: July 30, 1935, 8.5 feet.

(D-5-2)29db9. John Warnick, Pleasant Grove, Utah County. Diameter 4 inches, depth 104 feet. Measuring point, top of outlet pipe, 1.5 feet above land surface. Pressure head: Mar. 2, 1936, 6.0 feet.

a/ Found flowing.

b/ Well head rebuilt. Well leaking badly around outside of casing.

(D-5-2)29dc. Pleasant Grove, Utah County. Diameter 4 inches. Measuring point, top of outlet pipe, 0.5 foot below land surface. The southernmost of seven wells on east side of road. Pressure head: Aug. 30, 1935, 12.5 feet.

(D-6-2)28ba. Lewis Clegg, in northeast corner of property, 35 feet west of road, Lakeview, Utah County. Diameter 4 inches, depth 110 feet. Measuring point, top of rim on tee, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 14, 1935	+6.35	June 20, 1936	a/+7.15	Oct. 3, 1936	+ 8.5
Jan. 22, 1936	+7.05	Aug. 8	a/+7.4	Dec. 1	+10.5
Mar. 2	+8.10				

(D-7-2)12bb. Hugh Mooney, 312 South 9th West St., Provo, Utah County. Diameter 2 inches. Measuring point, top of ell, 2.2 feet above land surface. Pressure head: May 2, 1936, 14.5 feet.

(D-7-2)12bc. Drought Relief Administration, about 50 feet south of 5th South St. and 20 feet east of 9th West St., Provo, Utah County. Diameter 16 inches, depth 197 feet. Measuring point, top of instrument shelter floor, 1.0 foot above land surface. Well drilled for Provo City. Recording gage operated on this well throughout period of record.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 15, 1935	+13.5	Feb. 6, 1936	+18.0	July 14, 1936	+25.8
21	+12.2	15	+18.8	25	+24.9
27	+13.7	29	+19.1	Aug. 2	+25.0
Sept. 6	+12.9	Mar. 13	+18.9	10	+23.6
15	+13.0	22	+19.7	23	+25.0
25	+14.7	Apr. 1	+19.2	28	+23.4
Oct. 3	+14.0	May 1	+18.8	Sept. 3	+24.3
9	+13.6	10	+19.1	15	+24.0
17	+14.0	13	+18.5	18	+23.6
31	+15.6	19	+19.4	Oct. 14	+24.6
Nov. 15	+16.6	June 6	+27.0	31	+25.3
30	+17.4	10	+27.1	Nov. 15	+25.5
Dec. 14	+17.0	20	+25.0	30	+25.9
31	+17.6	30	+24.1	Dec. 15	+26.1
Jan. 15, 1936	+17.8	July 9	+23.7	31	+25.65
28	+18.0				

(D-7-3)6cd. R. S. Curtis, 68 North 5th East St., Provo, Utah County. Diameter 3 inches, depth 237 feet. Measuring point, top of outlet pipe, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 31, 1935	+2.91	Mar. 2, 1936	+5.2	Aug. 8, 1936	+9.5
Aug. 31	+1.59	May 2	+6.0	Oct. 3	+8.3
Oct. 7	a/+1.20	June 20	+10.9	Dec. 1	+10.2

(D-7-3)33ba. A. W. Finley, 101 East 4th North St., Springville, Utah County. Diameter 2 inches, depth 135 feet. Measuring point, top of northwest corner of concrete trough, 1.0 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 31, 1935	+6.2	Dec. 14, 1935	+5.15	June 20, 1936	+7.7
Aug. 31	+5.8	Jan. 22, 1936	+5.2	Aug. 8	+8.0
Oct. 7	+5.25	Mar. 2	+5.35	Oct. 3	+7.7
Nov. 19	+5.2	May 2	+6.25	Dec. 1	+7.0

a/ Found flowing.

(D-7-20)27ba. Eva T. Roberts, 210 feet south of road at western-most house in Leota, Uinta County. Diameter 48 inches, depth 90 feet. Measuring point, top of lower board of well curb, at land surface. Depth to water: Nov. 7, 1935, 86.70 feet.

(D-8-1)13aa. R. G. Francis, Lake Shore, Utah County. Diameter 4 inches, depth 385 feet. Measuring point, top of 2-inch ell, 1.6 feet above land surface. Pressure head: May 2, 1936, 11.75 feet; June 20, 10.4 feet; Aug. 8, 7.2 feet; Dec. 1, 12.2 feet.

(D-8-2)11ba. John B. Thomas, Palmyra, Utah County. Diameter 2 inches, depth 300 feet. Measuring point, top of tee, at land surface. Pressure head: Mar. 6, 1936, 4.35 feet (found flowing).

(D-8-2)23db1. Utah-Idaho Sugar Co., between factory buildings, Spanish Fork, Utah County. Diameter 3 inches, depth 390 feet. Measuring point, top of plug in tee over well, 1.8 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 2, 1936	+15.7	Aug. 8, 1936	+15.6	Dec. 1, 1936	+16.8
June 20	+15.6	Oct. 3	+16.25		

(D-8-2)23db2. Utah-Idaho Sugar Co., at southeast corner of coal silo, Spanish Fork, Utah County. Diameter 4 inches, depth 390 feet. Measuring point, top of second coupling north of gate valve, 2.0 feet above land surface. Pressure head: May 2, 1936, 15.0 feet.

(D-8-2)25cb2. Alvin Marcusen, Spanish Fork, Utah County. Diameter 2 inches, depth 346 feet. Measuring point, top of casing, at land surface. Depth to water: March 5, 1936, 1.4 feet.

(D-8-2)25cd1. John J. Hansen, Spanish Fork, Utah County. Diameter 2½ inches. Measuring point, top of ell, 1.7 feet above land surface. Pressure head: March 5, 1936, 5.55 feet (found flowing).

(D-8-2)26ba1. Mrs. S. D. Markham, Spanish Fork, Utah County. Diameter 2 inches, depth 400 feet. Measuring point, top of tee, 1.0 foot above land surface. Pressure head: March 6, 1936, 10.75 feet.

(D-8-2)26ba2. G. F. Larsen, Spanish Fork, Utah County. Diameter 2½ inches, depth 386 feet. Measuring point, top of ell, 1.6 feet above land surface. Pressure head: March 6, 1936, 11.2 feet.

(D-8-2)26ba3. Grant Starcks, Spanish Fork, Utah County. Diameter 2 inches, depth 380 feet. Measuring point, top of ell, 1.5 feet above land surface. Pressure head: March 6, 1936, 8.5 feet.

(D-8-2)26ba4. David Thomas, Spanish Fork, Utah County. Diameter 2 inches. Measuring point, top of ¾-inch ell, 1.0 foot above land surface. Pressure head: March 5, 1936, 8.4 feet.

(D-8-2)26ba5. Delia Thomas, Spanish Fork, Utah County. Diameter 2 inches, depth 380 feet. Measuring point, top of stake, at land surface. Pressure head: March 5, 1936, 7.0 feet.

(D-8-2)26bb. Melvin R. Atwood, Spanish Fork, Utah County. Diameter 2 inches, depth 380 feet. Measuring point, top of horizontal outlet of pipe cross, 0.9 feet above land surface. Pressure head: March 5, 1936, 25.9 feet.

(D-8-2)26cb. Roy Creer, Spanish Fork, Utah County. Diameter 2 inches, depth 358 feet. Measuring point, top of tee, 3.0 feet above land surface. Pressure head: March 6, 1936, 35.9 feet.

(D-8-2)27aa. Willard Peterson, Spanish Fork, Utah County. Diameter 2 inches, depth 340 feet. Measuring point, top of tee, 1.8 feet above land surface. Pressure head: March 6, 1936, 26.6 feet.

(D-8-3)4ca. Eddington Canning Co., Springville, Utah County. Diameter 4 inches, depth 230 feet. Measuring point, top of tee, 2.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 31, 1935	a/+14.5	Jan. 23, 1936	+15.0	June 21, 1936	+18.3
Oct. 8	a/+14.6	Mar. 6	+15.05	Aug. 8	+18.7
Nov. 19	+14.75	May 2	+15.7	Oct. 3	+17.8
Dec. 14	+14.6	June 20	b/+14.5	Dec. 1	+17.9

(D-8-3)19cd. Harry Christianson, Spanish Fork, Utah County. Diameter 1½ inches, depth, shallow. Measuring point, top of ell, 1.0 foot above land surface. Pressure head: March 6, 1936, 4.1 feet (found flowing).

(D-9-1)33bb. Drought Relief Administration, Genola, Utah County. Diameter 6 inches, depth 214 feet. Measuring point, top of casing, 6.0 feet below land surface. Drilled for Genola Community.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 1, 1936	-76.05	Aug. 8, 1936	-72.15	Nov. 30, 1936	-73.90
June 20	-72.83	Oct. 3	-73.10		

(D-9-2)5dd1. Drought Relief Administration, about 450 feet west of Denver & Rio Grande Western R.R. crossing, on north side of road, Payson, Utah County. Measuring point, top of ell, 1.0 foot above land surface. Drilled for City of Payson. City of Payson no. 3. Pressure head: July 31, 1935, 5.15 feet (found flowing).

(D-9-2)5dd2. Drought Relief Administration, about 100 feet west of well (D-9-2)5dd1, Payson, Utah County. Diameter 3 inches, depth 176 feet. Measuring point, top of ell, 1.0 foot above land surface. Drilled for City of Payson. City of Payson no. 8.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 31, 1935	a/+5.55	Dec. 14, 1935	+9.4	Aug. 8, 1936	a/+7.95
Aug. 31	a/+5.75	Mar. 5, 1936	+9.05	Oct. 3	+11.25
Oct. 8	a/+6.1	May 2	+8.9	Dec. 1	+11.75
Nov. 19	+8.95	June 20	+9.05		

(D-9-2)5dd3. Drought Relief Administration, about 175 feet west of well (D-9-2)5dd2, Payson, Utah County. Diameter 3 inches, depth 166 feet. Measuring point, top of ell, 1.3 feet above land surface. Drilled for City of Payson. City of Payson no. 7. Pressure head: July 31, 1935, 4.95 feet (found flowing).

(D-9-2)5dd4. Drought Relief Administration, about 175 feet west of well (D-9-2)5dd3, Payson, Utah County. Diameter 3 inches, depth 170 feet. Measuring point, top of casing, 1.0 foot above land surface. Drilled for City of Payson. City of Payson no. 6. Pressure head: July 31, 1935, 4.30 feet (found flowing).

a/ Found flowing.

b/ Pumping from well prior to measurement.

(D-9-2)11aa. Salt Lake & Utah R.R., Salem, Utah County. Diameter 3 inches, depth 320 feet. Measuring point, top of south corner of concrete basin, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 31, 1935	a/+25.25	Jan. 23, 1936	+25.35	Aug. 8, 1936	a/+27.95
Oct. 8	a/+25.45	Mar. 5	+25.10	Oct. 3	+29.0
Nov. 19	+25.3	May 2	+25.05	Nov. 30	+29.15
Dec. 14	+25.25	June 20	a/+26.5		

(D-9-2)30ca. Drought Relief Administration, about 170 feet southwest of Herman Twede's residence, Spring Lake, Utah County. Diameter 10 inches, depth 97 feet. Measuring point, top of 4-inch pipe over well pit, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 8, 1935	-14.57	Jan. 23, 1936	-15.35	Oct. 3, 1936	-11.85
Nov. 19	-14.72	June 20	-12.15	Nov. 30	b/-11.6
Dec. 14	-14.97	Aug. 8	-12.1		

(D-10-1)22dcl. Leslie E. Bylund, Starr, Juab County. Diameter 6 inches, depth 100⁺ feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
July 31, 1935	-86.20	Dec. 14, 1935	-84.83	June 20, 1936	c/-78.9
Aug. 31	-86.26	Jan. 23, 1936	-86.10	Aug. 8	c/-78.5
Oct. 8	-85.16	Mar. 5	-85.90	Oct. 3	c/-80.
Nov. 19	-82.42	May 1	c/-79.	Nov. 30	d/

(D-11-1)8aa4. Thos. G. Fowkes, Starr, Juab County. Diameter 3 inches, depth 90 feet. Measuring point, top of ell, 1.0 foot above land surface. Southernmost of four wells on property, at west side of highway.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	a/+4.9	Dec. 14, 1935	+5.75	June 20, 1936	a/+5.8
31	a/+5.4	Jan. 23, 1936	+5.7	Aug. 8	a/+6.7
Oct. 8	a/+5.8	Mar. 5	+5.8	Oct. 3	a/+6.9
Nov. 19	+5.85	May 1	a/+5.4	Nov. 30	+7.6

(D-11-1)8aa5. Starr Land & Development Co., about 160 feet southwest of well (D-11-1)8aa4, Starr, Juab County. Diameter 6 inches, depth 80 feet. Measuring point, top of casing, 0.8 foot above land surface. Pressure head: Aug. 31, 1935, 4.2 feet (found flowing--small leak during measurement).

(D-11-1)8aa6. Starr Land & Development Co., about 330 feet southwest of well (D-11-1)8aa5, Starr, Juab County. Diameter 6 inches, depth 90 feet. Measuring point, top of outlet pipe, 0.5 foot above land surface. Pressure head: Aug. 31, 1935, 4.4 feet (found flowing).

(D-11-1)8ac. Union Pacific Railroad, Starr, Juab County. Diameter 6 inches, depth 355 feet. Measuring point, top of 1- by 6-inch timber on concrete base, 4.0 feet above land surface. Pressure head: Aug. 1, 1935, 39.8 feet (found flowing into water tower).

a/ Found flowing.

b/ Pit has caved to 12 feet.

c/ Water dripping into casing above water level.

d/ Measuring conditions very bad. Abandoned further measurement.

(D-11-1)8ad2. Starr Land & Development Co., about 1,450 feet southwest of well (D-11-1)8aa6, Starr, Juab County. Diameter 6 inches, depth 90 feet. Measuring point, top of outlet pipe, 0.7 foot above land surface. Pressure head: Aug. 31, 1935, 1.67 feet (found flowing).

(D-11-1)3lab. Loren Keyte, Mona, Juab County. Diameter 2 inches, depth 75 feet. Measuring point, top of 2½-inch pipe, 4.4 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
May 1, 1936	-2.95	Aug. 8, 1936	-2.54	Nov. 30, 1936	-2.35
June 20	-2.64	Oct. 3	-2.48		

(D-12-1)19dc. Higginson & Christeson, Nephi, Juab County. Diameter 2 inches. Measuring point, top of casing, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 20, 1935	a/+0.9	May 1, 1936	a/+2.63	Oct. 2, 1936	a/+9.7
Dec. 14	a/+0.9	June 20	a/+7.75	Nov. 30	+9.9
Jan. 23, 1936	a/+1.27	Aug. 8	a/+9.8		

(D-13-1)6cb. Drought Relief Administration, Nephi, Juab County. Diameter 12 inches, depth 975(?) feet. Measuring point, top of casing, 0.5 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	-40.74	Dec. 14, 1935	-41.34	June 20, 1936	-34.68
31	-40.99	Jan. 23, 1936	-40.53	Aug. 8	-32.35
Oct. 8	-41.34	Mar. 4	-40.33	Oct. 3	-32.13
Nov. 20	-41.45	May 1	-38.90	Nov. 30	-31.62

(D-13-4)23dd. T. E. Rigby, Fairview, Sanpete County. Diameter 48 inches, depth 45 feet. Measuring point, top of 3- by 8-inch upright in southwest corner of well, 0.3 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1935	-41.80	Jan. 6, 1936	-43.98	June 19, 1936	- 9.80
Sept. 3	-42.29	Mar. 2	-44.60	Aug. 7	-37.53
Oct. 9	-43.46	Apr. 23	-28.49	Oct. 2	-40.94
Nov. 21	-42.46	May	b/- 3.5	Nov. 4	-39.60
Dec. 10	-42.28				

(D-14-1)6ba. G. H. Garrett, Nephi, Juab County. Diameter 6 inches, depth 240 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 8, 1935	-196.95	Jan. 23, 1936	-197.1	Aug. 8, 1936	-200.95
Sept. 20	-196.89	Mar. 4	-197.18		/(?)
Oct. 8	-196.82	May 1	-197.51	Oct. 3	-197.50
Nov. 20	-197.12	June 20	-197.46	Nov. 30	-197.46

a/ Found flowing.

b/ Reported by owner.

(D-14-2)13aa. Ernest Hansen, Fountain Green, Sanpete County. Diameter 2 inches, depth 71 feet. Measuring point, top of pipe, 2.0 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 1, 1935	+10.1	Dec. 13, 1935	+ 9.9	June 19, 1936	+14.55
Sept. 3	+10.0	Jan. 25, 1936	+ 9.8	Aug. 7	+14.9
Oct. 9	+ 9.3	Mar. 2	+ 9.75	Oct. 2	+14.35
Nov. 20	+ 9.45	May 1	+11.4	Nov. 29	+14.2

(D-14-3)7dd. Drought Relief Administration, on property of H. P. Olsen, Fountain Green, Sanpete County. Diameter 18 inches, depth 107 feet. Measuring point, ground surface. Not cased. Depth to water: Aug. 1, 1935, 16.3 feet; Sept. 1, 1935, 16.2 feet; Nov. 20, 1935, 15.5 feet.

(D-14-3)20bb. Lawrence Olson, Fountain Green, Sanpete County. Diameter 10 inches, depth 120 feet. Measuring point, bottom of hole in turbine, 1.0 foot above land surface. Depth to water: Nov. 20, 1935, 36.44 feet.

(D-14-3)33bc. Joseph S. Cloward, Moroni, Sanpete County. Diameter $1\frac{1}{4}$ inches, depth 150(?) feet. Measuring point, top of coupling, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 13, 1935	+2.30	May 1, 1936	+2.83	Oct. 2, 1936	+4.60
Jan. 25, 1936	+2.58	June 19	+3.20	Nov. 29	+5.3
Mar. 2	+2.75	Aug. 7	+4.26		

(D-15-2)12aa. Andrew Jensen, Freedom, Sanpete County. Diameter $1\frac{1}{4}$ inches, depth 32 feet. Measuring point, top of ell, 1.1 feet above land surface. Pressure head: Aug. 7, 1936, 0.45 foot.

(D-15-3)1cd. Drought Relief Administration, Mt. Pleasant, Sanpete County. Diameter 12 inches, depth 195(?) feet. Measuring point, top of plank, at land surface. Drilled for McArthur Frandson Ditch Co.; not cased.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1935	-49.60	Dec. 13, 1935	-52.38	Apr. 29, 1936	-53.80
Sept. 3	-50.53	Jan. 25, 1936	-53.32	June 19	-46.68
Oct. 9	-51.64	Mar. 2	-54.16	Aug. 7	<u>a/</u>
Nov. 20	-52.00				

(D-15-3)6cb. Kate Monson, Freedom, Sanpete County. Diameter $1\frac{1}{4}$ inches. Measuring point, top of cylinder at outlet of pitcher pump, 1.9 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Jan. 25, 1936	-17.21	June 19, 1936	-17.15	Oct. 2, 1936	-18.55
May 1	-12.00	Aug. 7	-18.04	Nov. 29	-17.42

(D-15-3)34dd. Andrew C. Jensen, at north side of pond, Chester, Sanpete County. Diameter $1\frac{1}{4}$ inches, depth 100-150 feet. Measuring point, top of casing, 1.0 foot below land surface. Pressure head: Oct. 2, 1936, 1.75 feet (found flowing); Nov. 29, 1936, 2.3 feet (found flowing).

a/ Caved in at -40 feet.

(D-15-4)4dd. Drought Relief Administration, about 60 feet south of road and 50 feet west of Denver & Rio Grande Western R.R. tracks, Mt. Pleasant, Sanpete County. Diameter 12 inches, depth 320 feet. Measuring point, top of casing, at land surface. Drilled for Twin Creek Irrigation Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1935	-26.22	Dec. 10, 1935	-28.79	June 19, 1936	-15.77
Sept. 3	-27.42	Jan. 10, 1936	-30.15	Aug. 7	-14.68
Oct. 9	-29.01	Mar. 2	-31.31	Oct. 2	-17.16
Nov. 21	-28.97	Apr. 24	-31.10	Nov. 29	-18.14

(D-15-4)10aa. Drought Relief Administration, in northwest corner of cemetery, Mt. Pleasant, Sanpete County. Diameter 12 inches, depth 247 feet. Measuring point, top of casing, 0.8 foot above land surface. Drilled for Twin Creek Irrigation Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1935	-15.30	Jan. 10, 1936	-15.45	Aug. 7, 1936	-14.16
Sept. 3	-16.31	25	-15.50	Oct. 2	-14.83
Oct. 9	-17.12	Mar. 2	-15.54	Nov. 4	-14.58
Nov. 20	-16.10	Apr. 23	-14.97	29	-14.32
Dec. 10	-16.03	June 19	-13.57		

(D-15-4)29ba. Drought Relief Administration, on property of Orrin Jensen, Spring City, Sanpete County. Diameter 12 inches, depth 210 feet. Measuring point, top of casing, 0.5 foot above land surface. Drilled for Horseshoe Irrigation Co.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 2, 1935	- 5.24	Dec. 10, 1935	-12.24	June 19, 1936	- 1.25
Sept. 3	- 9.78	Jan. 10, 1936	-14.96	Aug. 7	- 2.09
Oct. 9	-12.00	Mar. 3	-13.98	Oct. 2	- 4.77
Nov. 21	-13.00	Apr. 23	-11.66	Nov. 29	- 8.15

(D-15-4)3lda. Charles Olsen, Spring City, Sanpete County. Diameter 2 inches, depth 200+ feet. Measuring point, top of casing, at land surface. Pressure head: Aug. 2, 1935, 3.85 feet; Sept. 3, 3.70 feet; Oct. 8, 3.70 feet; Nov. 21, 3.53 feet. Found flowing prior to all measurements.

(D-15-4)3ldc. Charles A. Olsen, Spring City, Sanpete County. Diameter 2 inches, depth 200+ feet. Measuring point, top of casing, 0.5 foot below land surface. The center one of three wells in spring area along south side of pond. Pressure head: Aug. 2, 1935, 9.65 feet (found flowing).

(D-15-5)4aa. Arthur Candland, Mt. Pleasant, Sanpete County. Diameter 2 inches, depth 1,400 feet. Measuring point, top of tee, at land surface. Coal prospect hole. Pressure head: April 24, 1936, 22.0 feet. Found flowing.

(D-16-3)4aal. Joseph F. Bagnall, Chester, Sanpete County. Diameter 2 inches, depth 160 feet. Measuring point, top of casing, 0.2 foot above land surface. The north one of two wells on east side of concrete trough just west of house. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 5, 1935	+2.0	Dec. 13, 1935	+4.22	June 19, 1936	+5.35
Sept. 3	+1.95	Jan. 25, 1936	+4.6	Aug. 7	+5.1
Oct. 9	+1.86	Mar. 3	+4.9	Oct. 2	+4.8
Nov. 21	+3.85	Apr. 29	+5.5	Nov. 29	+5.4

(D-16-3)4aa2. Joseph F. Bagnall, 2 feet south of well (D-16-3)4aa1, Chester, Sanpete County. Diameter 2 inches, depth 140 feet. Measuring point, top of casing of (D-16-3)4aa1, 0.2 foot above land surface. Pressure head: Sept. 3, 1935, 1.75 feet.

(D-16-3)5ab. Drought Relief Administration, 3 feet west of main well; used as gravel chute, Wales, Sanpete County. Diameter 8 inches, depth 90 feet. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: Sept. 4, 1935, 9.0 feet (pumping from adjacent well); Oct. 9, 1935, 7.64 feet; Nov. 21, 1935, 1.90 feet.

(D-16-3)9bcl. John A. Seely & Sons, about 200 feet north of house, at east end of reservoir, Chester, Sanpete County. Diameter 4 inches, depth 344 feet. Measuring point, top of casing, 1.5 feet above land surface. Found flowing prior to all measurements. Pressure head: Sept. 3, 1935, 11.1 feet; Oct. 9, 10.95 feet; Nov. 20, 12.55 feet; Oct. 2, 1936, 13.75 feet.

(D-16-3)9bc2. John A. Seely & Sons, about 500 feet northwest of well (D-16-3)9bcl, Chester, Sanpete County. Measuring point, top of casing, 1.6 feet above land surface. Pressure head: Sept. 3, 1935, 9.85 feet; Oct. 9, 9.85 feet; Nov. 20, 11.95 feet; Oct. 2, 1936, 12.1 feet. Found flowing at all measurements except Oct. 2, 1936.

(D-16-3)13da. Boyd W. DeBunce, Spring City, Sanpete County. Diameter 48 inches, depth 49.5 feet. Measuring point, top of 2- by 12-inch plank over well, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 3, 1935	-48.02	Jan. 25, 1936	-48.30	Aug. 7, 1936	-48.30
Oct. 9	-48.68	Mar. 3	-48.75	Oct. 2	-47.43
Nov. 21	-49.25	Apr. 23	-50.15	Nov. 29	-47.92
Dec. 10	-48.53	June 19	-49.62		

(D-16-3)26cb. P. C. Peterson, Ephraim, Sanpete County. Diameter 6 inches, depth 840 feet. Measuring point, top of ell, 2.0 feet above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 5, 1935	+48.1	Nov. 21, 1935	+51.3	Apr. 24, 1936	+51.0
Sept. 2	+50.2	Jan. 25, 1936	+52.6	Aug. 7	+52.95
Oct. 9	+49.7				

(D-16-3)28cc. John K. Olson, in corral, north of stockyard, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 90 feet. Measuring point, top of casing, 0.5 foot above land surface. Pressure head: Dec. 1, 1935, 1.12 feet (found flowing).

(D-16-3)28cd1. John K. Olson, pump well at residence, Ephraim, Sanpete County. Diameter 12 inches, depth 100 feet. Measuring point, top of casing, 0.7 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 1, 1935	-8.65	Apr. 30, 1936	-8.16	Oct. 2, 1936	a/-6.25
Jan. 10, 1936	-8.56	June 18	a/-5.33	Nov. 29	a/-6.51
Mar. 3	-8.35	Aug. 7	a/-5.45		

a/ When the depth to water is less than 7 feet, the well is discharging through a drain constructed by the owner to prevent flow over top of casing. Thus these measurements do not represent the true static level.

(D-16-3)28cd2. John K. Olson, near northeast corner of pasture, just southwest of house, Ephraim, Sanpete County. Diameter 4 inches, depth 257 feet. Measuring point, top of casing, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 1, 1935	-1.87	Mar. 3, 1936	-1.49	June 18, 1936	a/+0.01
Jan. 10, 1936	-1.85	Apr. 30	-1.25		

(D-16-3)28cd3. John K. Olson, in corral near barn, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 150 feet. Measuring point, top of casing, at land surface. Depth to water: Dec. 1, 1935, 0.98 foot; Jan. 10, 1936, 0.84 foot.

(D-16-3)31cd1. Geo. W. Sorenson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 179 feet. Measuring point, top of ell, 1.0 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	+3.32	Dec. 13, 1935	+4.20	Oct. 1, 1936	+4.15
12	+4.45	Jan. 7, 1936	+4.10		

(D-16-3)32ac. D. P. Madsen, Ephraim, Sanpete County. Diameter 2 inches, depth 140 feet. Measuring point, top of ell, 0.5 foot above land surface. Pressure sometimes builds up and then drops lower, indicating an underground leak from well. Only 30 feet of casing in well.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 30, 1935	a/+1.63	Jan. 7, 1936	+0.85	June 18, 1936	a/+1.96
Dec. 12	+0.78	24	+0.60	Aug. 6	a/+2.38
13	+0.82	Apr. 24	+1.17	Oct. 1	a/+2.28

(D-16-3)32ad1. David N. Beal, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 130 feet. Measuring point, top of casing, 0.6 foot above land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	+2.23	Jan. 8, 1936	+2.22	June 18, 1936	+4.07
11	+2.22	24	+2.18	Aug. 6	+4.9
13	+2.23	Apr. 24	+2.68	Oct. 1	+4.25

(D-16-3)32ad2. Chris Olsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 180 feet. Measuring point, top of casing, 0.7 foot above land surface. Depth to water: Nov. 30, 1935, 0.98 foot.

(D-16-3)32bcd1. J. E. Andersen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 135 feet. Measuring point, top of ell, at land surface. Found flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 30, 1935	+2.90	Jan. 8, 1936	+3.00	June 18, 1936	+2.17
Dec. 12	+3.25	24	+2.93	Aug. 6	+2.06
13	+3.27	Apr. 24	+2.76		

a/ Found flowing.

(D-16-3)32bc2. Henry L. Beal, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 146 feet. Measuring point, top of ell, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 30, 1935	-0.42	Dec. 13, 1935	-0.25	Apr. 24, 1936	a/-1.53
Dec. 11	-0.25	Jan. 24, 1936	-0.50		

(D-16-3)32cd1. E. Odell Peterson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 168 feet. Measuring point, top of ell, 1.2 feet above land surface. Depth to water: Dec. 1, 1935, 2.35 feet.

(D-16-3)32cd2. Newton Noyes, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 168 feet. Measuring point, top of casing, 0.7 foot above land surface and 5,440.90 feet above sea level. Pressure head: June 18, 1936, 1.90 feet (found flowing).

(D-16-3)32db. Clayton Peterson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches. Measuring point, top of ell on casing, 0.5 foot above land surface. Pressure head: Nov. 30, 1935, 1.47 feet (found flowing).

(D-16-3)32dc1. Martin Isaacson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 140 feet. Measuring point, top of ell on casing, 0.8 foot above land surface and 5,454.79 feet above sea level. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	+2.42	May 19, 1936	b/+2.5	Aug. 6, 1936	+3.53
11	+2.30	June 18	+1.40	Oct. 1	+4.20
13	+2.38				

(D-16-3)33ba1. P. S. Justeson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 147 feet. Measuring point, top of casing, 0.2 foot below surface and 5,458.97 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 1, 1935	-1.43	Jan. 10, 1936	-1.42	Aug. 7, 1936	c/+ .8+
12	-1.40	Mar. 3	-1.26	Oct. 2	c/+ .01
Jan. 7, 1936	-1.41	June 18	-.17	Nov. 29	c/+ .40
8	-1.41				

(D-16-3)33ba2. P. S. Justeson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 118 feet. Measuring point, top of tee on casing, at land surface and 5,458.56 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 1, 1935	-2.33	Mar. 3, 1936	-2.08	Aug. 7, 1936	-.87
12	-2.49	Apr. 30	-2.12	Oct. 2	-1.41
Jan. 8, 1936	-2.43	June 18	-.79	Nov. 29	-.90
10	-2.43				

(D-16-3)33bc1. Chris Olsen, Ephraim, Sanpete County. Diameter 2 inches, depth 180 feet. Measuring point, top of tee on casing, 1.4 feet above land surface and 5,460.71 feet above sea level. Depth to water: Nov. 30, 1935, -1.00 foot; Dec. 11, 0.99 foot; Dec. 13, 0.97 foot; May 19, 1936, found flowing.

- a/ Casing probably leaking under ground. Measurements discontinued.
 b/ Estimated.
 c/ Found flowing.

(D-16-3)33bc2. Chris Olsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of casing, 0.3 foot below land surface and 5,451.83 feet above sea level. Pressure head: Nov. 30, 1935, 4.1 feet (found flowing).

(D-16-3)33bc3. Chris Olsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 135 feet. Measuring point, top of casing, 0.5 foot above land surface and 5,453.07 feet above sea level. Pressure head: Nov. 30, 1935, 0.7 foot (found dripping).

(D-16-3)33cb1. Martha Olsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	-5.40	Jan. 8, 1936	-5.22	June 18, 1936	-4.15
11	-5.37	10	-5.20	Aug. 6	-5.70
13	-5.35	24	-5.35	Oct. 2	-7.21
Jan. 7, 1936	-5.21	Apr. 24	-9.34		

(D-16-3)33cb2. S. C. Olsen, Ephraim, Sanpete County. Diameter 2 inches, depth 186 feet. Measuring point, top of casing, at land surface. Depth to water: Nov. 30, 1935, 4.08 feet; June 19, 1936, 3.40 feet.

(D-16-3)33cc. S. C. Olsen, Ephraim, Sanpete County. Diameter 8 inches, depth 89 feet. Measuring point, top of casing, 0.3 foot above land surface and 5,465.33 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 22, 1935	-11.5	Jan. 7, 1936	-11.86	June 18, 1936	-5.60
Nov. 30	-11.94	8	-11.85	Aug. 6	-5.45
Dec. 11	-11.93	10	-11.85	Oct. 2	-7.62
12	-11.91	24	-11.53	Nov. 29	-7.91
13	-11.86	May 19	-11.0		

(D-16-4)18cb. T. B. Sorenson, Ephraim, Sanpete County. Diameter 96 inches, depth 52 feet. Measuring point, top of well cover, 1.0 foot above land surface. Depth to water: Sept. 3, 1935, 49.06 feet.

(D-17-2)36ca. George Cox, Manti, Sanpete County. Diameter 4 inches, depth 50 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 5, 1935	-0.72	Dec. 12, 1935	-2.65	Aug. 6, 1936	a/+5.6
Sept. 5	-.95	Jan. 9, 1936	-3.38	Oct. 1	a/+4.1
Nov. 21	-2.40	June 18	a/+4.32	Nov. 30	+2.80

(D-17-2)36cd. George Cox, Manti, Sanpete County. Diameter 12 inches, depth 396 feet. Measuring point, top of casing, 1.7 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 5, 1935	-11.8	Nov. 21, 1935	-15.92	Jan. 9, 1936	-17.62
Sept. 5	-12.15	Dec. 12	-16.37	June 18	- 3.93
Oct. 10	-15.55				

a/ Found flowing.

(D-17-3)4bc. Chris Olsen and others, Ephraim, Sanpete County. Diameter 12 inches, depth 396 feet. Measuring point, bottom of slot in casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 13, 1935	-18.7	Apr. 24, 1936	-21.10	Oct. 2, 1936	-12.70
Jan. 3, 1936	-19.1	Aug. 6	-12.65	Nov. 29	-13.23
Mar. 3	-20.35				

(D-17-3)5aa1. J. C. Larsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of casing, 0.8 foot above land surface and 5,465.25 feet above sea level. Depth to water: Dec. 1, 1935, 0.96 foot; May 19, 1936, 1.35 feet.

(D-17-3)5aa2. Chauncey Petersen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 195 feet. Measuring point, top of ell on casing, 1.0 foot above land surface. Depth to water: Dec. 1, 1935, 1.43 feet; May 19, 1936, 1.5 feet.

(D-17-3)5aa3. George Beal, Ephraim, Sanpete County. Diameter 3 inches, depth 80 feet. Measuring point, top of ell above reducer, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 1, 1935	-0.57	Jan. 24, 1936	-.7	June 18, 1936	-4.30
3	-.58	Apr. 24	-1.25	Aug. 6	a/+2.10
11	-.57	May 19	-.75	Oct. 2	a/+2.20
13	-.59				

(D-17-3)5aa4. George Beal, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 145 feet. Measuring point, top of outlet of tee, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	a/+0.37	Apr. 24, 1936	-.35	Aug. 6, 1936	a/+3.48
11	a/-.17	May 19	a/	Oct. 2	a/+3.62
13	a/- .01	June 18	-4.37		

(D-17-3)5ab. P. C. Petersen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 144 feet. Measuring point, top of tee on casing, 1.0 foot above land surface. Depth to water: Dec. 1, 1935, 1.32 feet; May 19, 1936, 2.45 feet.

(D-17-3)5ac. Ida Nielsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 187 feet. Measuring point, top of ell on casing, 0.2 foot below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	a/+4.8	Jan. 7, 1936	a/+4.85	Aug. 6, 1936	a/+8.8
11	a/+4.6	Apr. 30	a/+3.85	Oct. 1	a/+9.35
13	a/+4.5	June 18	-.13		

(D-17-3)5bd1. Alden Beal, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 140 feet. Measuring point, top of ell on casing, 0.7 foot above land surface and 5,452.72 feet above sea level. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	+2.98	Dec. 13, 1935	+2.92	Aug. 6, 1936	+5.2
11	+2.95	June 18, 1936	+ .25	Oct. 1	+6.05

a/ Found flowing.

(D-17-3)5bd2. A. E. Thompson, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 150 feet. Measuring point, top of ell on casing, 0.8 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 1, 1935	-0.18	Dec. 13, 1935	-.18	Oct. 1, 1936	<u>a/+</u> .59
11	-.16	June 18, 1936	-2.11		

(D-17-3)5bd3. A. E. Thompson, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 140 feet. Measuring point, top of casing, 0.7 foot above land surface and 5,448.44 feet above sea level. Depth to water: June 18, 1936, 1.84 feet.

(D-17-3)5bd4. A. E. Thompson, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 150 feet. Measuring point, top of casing, 1.0 foot above land surface and 5,448.96 feet above sea level. Depth to water: May 19, 1936, 0.45 foot; June 18, 1936, 2.15 feet.

(D-17-3)5bd5. Parley Sorenson, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 140 feet. Measuring point, top of ell on casing, 0.7 foot above land surface and 5,450.42 feet above sea level. Pressure head: Dec. 11, 1935, 2.76 feet (found flowing).

(D-17-3)5ca. Alonzo Hansen, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 248 feet. Measuring point, top of cracked ell, 0.5 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	+1.46	Mar. 3, 1936	+1.35	Aug. 6, 1936	+4.8
11	+1.46	Apr. 30	+ .90	Oct. 1	+4.7
13	+1.47	June 18	-1.52		

(D-17-3)5cb. F. H. Rasmussen, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 90 feet. Measuring point, top of casing, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	-0.77	Jan. 24, 1936	-.55	June 18, 1936	-.20
12	-.60	Apr. 30	-2.70	Aug. 6	<u>a/+</u> 1.70
13	-.64	May 19	-2.25	Oct. 1	<u>a/+</u> 1.58

(D-17-3)5cc1. Fergus Bjerregaard, Ephraim, Sanpete County. Diameter 3 inches, depth 356 feet. Measuring point, top of outlet of tee, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	<u>a/+</u> 7.4	Jan. 9, 1936	+7.25	Aug. 7, 1936	<u>a/+</u> 14.4
12	<u>a/+</u> 6.8	Apr. 24	<u>a/+</u> 6.05	Oct. 1	<u>a/+</u> 13.1
13	<u>a/+</u> 7.25	June 18	<u>a/+</u> 9.7	Nov. 28	<u>a/+</u> 12.8

(D-17-3)5cc2. Lauritz Nielsen, Ephraim, Sanpete County. Diameter $1\frac{1}{8}$ inches, depth 136 feet. Measuring point, top of ell on casing, 1.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 30, 1935	-1.76	Jan. 24, 1936	-1.40	May 19, 1936	-.35
Dec. 12	-1.60	Mar. 3	-.95	June 18	<u>b/+</u> .19
13	-1.62	Apr. 24	-.80	Oct. 2	<u>b/+</u> .29

a/ Found flowing.

b/ Found dripping.

(D-17-3)5cd1. J. O. Andersen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 191 feet. Measuring point, top of casing, 0.7 foot above land surface and 5,455.44 feet above sea level.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	-8.18	Dec. 13, 1935	-7.93	Mar. 3, 1936	-7.95
12	-7.93	Jan. 9, 1936	-7.63	Oct. 1	-4.77

(D-17-3)5cd2. Orson Poulsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 130 feet. Measuring point, top of ell on casing, 0.2 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	-4.88	Jan. 24, 1936	-4.79	Oct. 1, 1936	<u>a</u> /-1.08
12	-4.73	June 18	-2.65	Nov. 28	<u>a</u> /-1.25
13	-4.72	Aug. 6	-1.32		

(D-17-3)5dc. Niels Martinsen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 225 feet. Measuring point, top of coupling on casing, 0.8 foot above land surface. Depth to water: Dec. 2, 1935, 3.56 feet; Oct. 1, 1936, 2.19 feet.

(D-17-3)6aa. Wm. Larsen, Ephraim, Sanpete County. Diameter 4 inches, depth 318 feet. Measuring point, top of casing, at land surface and 5,440.85 feet above sea level. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 30, 1935	+12.7	Jan. 7, 1936	+13.15	Oct. 1, 1936	+16.65
Dec. 12	+13.05	June 18	+13.8	Nov. 28	+16.7
13	+12.8				

(D-17-3)6ab. Andrew Christiansen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 132 feet. Measuring point, top of casing, 1.0 foot above land surface and 5,430.87 feet above sea level. Pressure head: Jan. 7, 1936, 2.24 feet (found flowing).

(D-17-3)6bb1. Nels Thompson, Ephraim, Sanpete County. Diameter 4 inches, depth 170 feet. Measuring point, top of casing, at land surface and 5,421.4 feet above sea level. Pressure head: Dec. 3, 1935, 15.7 feet; Dec. 12, 16.15 feet; Dec. 13, 14.0 feet; Jan. 8, 1936, 15.7 feet.

(D-17-3)6bb2. Nels Thompson, Ephraim, Sanpete County. Diameter 4 inches, depth 170 feet. Measuring point, top of tee on casing, 0.8 foot above land surface and 5,422.98 feet above sea level. Pressure head: Dec. 3, 1935, 13.85 feet.

(D-17-3)6bc1. Nels Thompson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 154 feet. Measuring point, top of casing, 0.7 foot above land surface and 5,423.74 feet above sea level. Recording gage operated on this well throughout period of record.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 12, 1935	+8.6	Apr. 15, 1936	+5.2	Aug. 5, 1936	+7.15
31	+7.9	30	+5.0	15	+7.45
Jan. 15, 1936	+8.0	May 15	+5.1	31	+6.7
31	+8.0	June 5	+5.2	Sept. 15	+6.7
Feb. 10	+8.1	10	+6.2	Oct. 1	+7.35
Mar. 5	+7.0	25	+6.55	15	+6.0
18	+5.7	July 12	+5.5	31	+5.85
31	+5.4	25	+6.1	Nov. 10	+5.8

a/ Found flowing.

(D-17-3)6bc1.--continued.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 20, 1936	+5.5	Dec. 10, 1936	+5.9	Dec. 31, 1936	+7.0
30	+6.0	25	+6.0		

(D-17-3)6bc2. Nels Thompson, Ephraim, Sanpete County. Diameter 4 inches, depth 320 feet. Measuring point, top of casing, 0.1 foot below land surface and 5,420.8 feet above sea level. Pressure head: Dec. 3, 1935, 14.9 feet; Dec. 12, 15.35 feet; Dec. 13, 14.9 feet; Jan. 8, 1936, 14.45 feet.

(D-17-3)6ca. Anthon Anderson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of ell on casing, 0.8 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	+6.4	Jan. 10, 1936	+6.2	June 18, 1936	+5.2
12	+5.5	Mar. 3	+5.75	Aug. 6	+5.8
13	+6.5	Apr. 24	+3.74	Oct. 1	+5.5

(D-17-3)6cc. Charles Johansen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches. Measuring point, top of ell on casing, 1.0 foot above land surface. Well flowing prior to all measurements. Pressure head: Dec. 3, 1935, 7.8 feet; Dec. 12, 8.05 feet; Dec. 13, 7.85 feet; Jan. 7, 1936, 7.5 feet.

(D-17-3)6db. Hans Christensen, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 135 feet. Measuring point, top of casing, at land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	+4.35	Jan. 24, 1936	+4.4	Aug. 6, 1936	+4.5
12	+4.45	Mar. 3	+4.10	Oct. 1	+4.35
13	+4.45	Apr. 24	+2.60	Nov. 28	+4.00
Jan. 10, 1936	+4.15	June 18	+3.80		

(D-17-3)6dc. Elmer Sorenson, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 160 feet. Measuring point, top of ell on casing, 0.8 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	+2.09	Dec. 13, 1935	+2.00	Oct. 1, 1936	+2.83
12	+2.03	Jan. 9, 1936	+2.01		

(D-17-3)7ab. John S. Beal, Ephraim, Sanpete County. Diameter $1\frac{1}{2}$ inches, depth 150 feet. Measuring point, top of casing, 1.3 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 3, 1935	a/+3.30	Dec. 13, 1935	a/+3.40	Jan. 24, 1936	+3.18
12	a/+3.45	Jan. 9, 1936	a/+3.25	Oct. 2	a/+3.79

a/ Found flowing.

(D-17-3)7bb. Jacob Thompson, Ephraim, Sanpete County. Diameter 4 inches, depth 400 feet. Measuring point, top of ell on casing, 1.2 feet above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Oct. 10, 1935	a/+ 9.1	Jan. 7, 1936	+12.15	June 18, 1936	+10.7
Nov. 21	+11.85	9	+12.1	Aug. 7	+14.5
Dec. 3	+12.45	24	+12.4	Oct. 1	+13.65
12	+12.6	Apr. 24	+ 9.5	Nov. 28	+11.6
13	+12.5				

(D-17-3)8bb. J. O. Anderson, Ephraim, Sanpete County. Diameter 1½ inches, depth 186 feet. Measuring point, top of casing, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Nov. 21, 1935	-0.32	Jan. 9, 1936	- .25	Aug. 7, 1936	a/+5.35
30	- .16	24	- .3	Oct. 1	a/+4.6
Dec. 12	- .02	Apr. 24	-1.24	Nov. 28	a/+3.63
13	- .06	June 18	a/+1.94		

(D-17-3)8bc. Seymour Christensen, Ephraim, Sanpete County. Diameter 1½ inches, depth 135 feet. Measuring point, top of ell on casing, 0.5 foot above land surface. Well flowing prior to all measurements. Pressure head: Dec. 2, 1935, 1.11 feet; Dec. 12, 1.22 feet; Dec. 13, 1.18 feet; Jan. 9, 1936, 1.05 feet.

(D-17-3)8cd. Stanley Nielsen, Ephraim, Sanpete County. Diameter 6 inches, depth 350 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
June 12, 1932	-15.0	Dec. 13, 1935	-14.83	June 18, 1936	-11.81
Dec. 2, 1935	-14.90	Jan. 9, 1936	-14.90	Aug. 7	- 6.16
12	-14.78	Apr. 24	-15.93	Oct. 1	- 8.35

(D-17-3)9cb. Drought Relief Administration, Ephraim, Sanpete County. Diameter 10 inches, depth 285 feet. Measuring point, top of casing, 1.0 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Dec. 2, 1935	-51.82	Jan. 24, 1936	-52.27	Aug. 7, 1936	-41.19
12	-51.72	Mar. 3	-52.38	Oct. 1	-42.33
13	-51.80	Apr. 24	-52.87	Nov. 28	-43.60
Jan. 9, 1936	-52.05	June 18	-46.44		

(D-18-2)1da. L. H. Hougaard, Manti, Sanpete County. Diameter 12 inches, depth 205 feet. Measuring point, top of casing, 1.7 feet above land surface and 5,555.64 feet above sea level. Recording gage operated on this well since Nov. 5, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Sept. 5, 1935	-74.73	Mar. 3, 1936	-82.85	Nov. 5, 1936	-69.32
Oct. 10	-77.12	Apr. 23	-83.30	15	-70.07
Nov. 21	-79.20	June 18	-63.37	30	-71.03
Dec. 12	-79.87	Aug. 6	-60.60	Dec. 15	-71.67
Jan. 9, 1936	-80.65	Oct. 1	-66.36	28	-72.78

a/ Found flowing.

(D-18-2)12ba. City of Manti, Manti, Sanpete County. Diameter 12 inches, depth 304 feet. Measuring point, top of casing, 0.5 foot above land surface. Recording gage operated on this well between Nov. 22, 1935, and Nov. 4, 1936.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 3, 1935	-71.36	Mar. 31, 1936	-82.77	July 10, 1936	-59.20
Sept. 5	-71.90	Apr. 10	-83.08	20	-58.91
Oct. 10	-76.16	20	-82.82	Aug. 3	-59.13
Nov. 21	-78.50	30	-82.46	15	-60.50
Dec. 15	-79.55	May 10	-81.97	31	-62.19
31	-80.20	20	-79.25	Sept. 15	-63.82
Jan. 15, 1936	-80.69	31	-73.31	30	-65.34
31	-81.21	June 10	-66.99	Oct. 15	-67.28
Feb. 29	-82.32	20	-62.26	31	-68.72
Mar. 15	-82.65	30	-59.98	Nov. 30	-71.26

(D-19-2)8dal. Elda Frischknecht, Mayfield, Sanpete County. Diameter 2 inches, depth 93 feet. Measuring point, top of ell on casing, 0.5 foot above land surface. Well flowing prior to all measurements.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 6, 1935	+5.5	Jan. 25, 1936	+3.03	Aug. 6, 1936	+11.3
Sept. 5	+5.0	Mar. 4	+2.77	Sept. 30	+ 9.1
Oct. 10	+4.23	Apr. 23	+2.73	Nov. 28	+ 8.3
Nov. 22	+3.71	June 18	+10.2		

(D-19-2)9cc. Elda Frischknecht, Mayfield, Sanpete County. Diameter 2 inches, depth 145 feet. Measuring point, top of casing, at land surface. Depth to water: Nov. 22, 1935, 6.98 feet.

(D-19-2)29aa. Mayfield Irrigation Co., Mayfield, Sanpete County. Diameter 12 inches, depth 166 feet. Measuring point, top of casing, 0.5 foot above land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 6, 1935	-32.17	Jan. 25, 1936	-41.98	Aug. 6, 1936	-21.14
Sept. 5	-33.97	Mar. 2	-43.85	Sept. 30	-28.18
Oct. 10	-36.43	Apr. 23	-45.21	Nov. 28	-32.25
Nov. 22	-39.20	June 18	-19.53		

(D-20-1)5ad. Christian Sorenson, Centerfield, Sanpete County. Diameter 4 inches, depth 93 feet. Measuring point, top of casing, 1.3 feet above land surface. Depth to water: Apr. 23, 1936, 50.78 feet; June 14, 1936, 48.97 feet.

(D-20-1)5dc. W. M. Nielsen, Centerfield, Sanpete County. Diameter 4 inches, depth 96 feet. Measuring point, top of casing, 2.5 feet below land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 6, 1935	-39.02	Nov. 23, 1935	-38.74	Aug. 6, 1936	-32.75
Sept. 5	-37.83	Jan. 26, 1936	-39.20	Sept. 30	-27.48
Oct. 10	-38.09	Apr. 23	-39.44	Nov. 28	-28.85

(D-20-1)20ab. Federal Land Bank, Axtell, Sanpete County. Diameter 48 inches, depth 50 feet. Measuring point, top of plank south of pump, at land surface.

Date	Water level (feet)	Date	Water level (feet)	Date	Water level (feet)
Aug. 6, 1935	-47.01	Jan. 26, 1936	-48.33	Aug. 6, 1936	-46.68
Sept. 5	<u>a</u> -47.81	Apr. 22	-48.52	Sept. 30	-46.25
Oct. 10	-47.73	June 17	-48.00	Nov. 28	-46.70
Nov. 23	-48.01				

(D-25-1)31cb. Charles Burr, Plateau, Sevier County. Diameter 2 inches. Measuring point, top of casing, 0.3 foot above land surface. Well flowing prior to all measurements. Pressure head: Apr. 22, 1936, 2.45 feet; Aug. 5, 2.11 feet; Sept. 29, 1.42 feet; Nov. 27, 1.84 feet.

(D-27-2)25bd. Silas Tanner, Fremont, Wayne County. Diameter 2 inches, depth 289 feet. Measuring point, top of casing, 0.5 foot above land surface. Well flowing prior to all measurements. Pressure head: Apr. 22, 1936, 5.8 feet; Sept. 29, 7.9 feet; Nov. 27, 7.8 feet.

(D-27-2)34cc. D. H. Allred, Loa, Wayne County. Diameter 2 inches, depth 225 feet. Measuring point, top of ell on casing, 1.0 foot above land surface. Pressure head: Apr. 22, 1936, 48.6 feet (found flowing); Sept. 29, 1936, 49.7 feet (found flowing).

(D-27-3)17cd. Charles Ellett, Fremont, Wayne County. Diameter 2 inches, depth 150 feet. Measuring point, top of tee on casing, 2.2 feet above land surface. Well flowing prior to all measurements. Pressure head: Apr. 22, 1936, 4.5 feet; Sept. 29, 10.5 feet; Nov. 27, 10.0 feet.

(D-28-4)36cd. Vernon Lee, Torrey, Wayne County. Diameter 6 inches, depth 112 feet. Measuring point, top of coupling on casing, at land surface. Depth to water: Apr. 21, 1936, 8.53 feet; Sept. 29, 10.54 feet; Nov. 27, 10.17 feet.

(D-29-4)3dd. Torrey community, Torrey, Wayne County. Diameter 8 inches, depth 500 feet. Measuring point, top of casing, at land surface. Depth to water: Apr. 21, 1936, 53.11 feet; Aug. 5, 34.90 feet; Sept. 29, 35.71 feet; Nov. 27, 36.36 feet.

(D-29-4)15ca. W. P. Coleman, Teasdale, Wayne County. Diameter 3½ inches, depth 192 feet. Measuring point, top of coupling on casing, 1.3 feet above land surface. Depth to water: Apr. 21, 1936, 22.40 feet; Aug. 5, 23.40 feet; Sept. 29, 23.52 feet; Nov. 27, 21.39 feet.

U(A-1-1)18cd. Uinta Boarding School, Whiterocks, Uinta County. Diameter 8 inches, depth 750 feet. Measuring point, top of casing, 0.7 foot above land surface. Pressure head: Oct. 30, 1936, 0.55 foot (found flowing).

U(B-1-1)2cal. Jay Larson, Whiterocks, Uinta County. Diameter 8 inches, depth 50 feet. Measuring point, top of casing, 1.0 foot above land surface. Depth to water: Oct. 30, 1936, 24.85 feet.

U(B-1-1)2ca2. Jay Larson, Whiterocks, Uinta County. Diameter 8 inches, depth 50 feet. Measuring point, top of casing, at land surface. Depth to water: Oct. 30, 1936, 23.65 feet.

U(B-1-1)31da. Glen Woodward, Neola, Duchesne County. Diameter 6 inches, depth 540 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Oct. 30, 1936, 6.88 feet.

U(C-1-1)31ba. James Bacon, Cedarview, Duchesne County. Diameter 2 inches. Measuring point, top of ell on outlet, 2.8 feet above land surface. Pressure head: Oct. 30, 1936, 3.8 feet (found flowing).

a/ Just stopped pumping.

U(C-1-2)4ad. Drought Relief Administration, Monarch, Duchesne County. Diameter 6 inches, depth 400 feet. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Oct. 30, 1936, 17.75 feet.

U(C-1-2)15bb. R. M. Clark, Monarch, Duchesne County. Diameter 1 inch, depth 100 feet. Measuring point, top of ell on casing, 2.6 feet above land surface. Pressure head: Nov. 9, 1935, 8.2 feet (found flowing); Oct. 30, 1936, 8.6 feet (found flowing).

U(C-1-2)27aa. Drought Relief Administration, Montwell, Duchesne County. Diameter 5 inches, depth 215 feet. Measuring point, top of collar of outlet pipe, 2.7 feet above land surface. Pressure head: Nov. 9, 1935, 5.8 feet (found flowing); Oct. 30, 1936, 6.2 feet (found flowing).

U(C-1-5)13ad1. Drought Relief Administration, Mountain Home, Duchesne County. Diameter 8 inches, depth 367 feet. Measuring point, top of casing, 7.2 feet below land surface. Depth to water: Oct. 28, 1936, 5.96 feet.

U(C-1-5)13ad2. Brig. Stephenson, Mountain Home, Duchesne County. Diameter 48 inches, depth 25 feet. Measuring point, top of platform, 0.5 foot above land surface. Depth to water: Oct. 28, 1936, 14.72 feet.

U(C-2-1)18cb. Christy Bouden, Roosevelt, Duchesne County. Diameter $1\frac{1}{2}$ inches, depth 180 feet. Measuring point, top of casing, 0.2 foot above land surface. Pressure head: Oct. 29, 1936, 24.25 feet (found flowing).

U(C-2-1)22ab. Wilfred McConkie, Roosevelt, Duchesne County. Depth 525 feet. Measuring point, top of ell on pipe, 1.6 feet above land surface. Pressure head: Oct. 30, 1936, 10.95 feet (found flowing).

U(C-2-1)22bc. Stephen Wogac. Roosevelt, Duchesne County. Diameter 6 inches, depth 426 feet. Measuring point, top of concrete curb, 1.0 foot above land surface. Pressure head: Nov. 7, 1935, 33.3 feet; Oct. 30, 1936, 49.7 feet.

U(C-2-1)23aa. Drought Relief Administration, Roosevelt, Uinta County. Diameter 10 inches, depth 234 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Nov. 7, 1935, 30.53 feet; Oct. 30, 1936, 34.58 feet (pumped well about 10 minutes earlier); Oct. 31, 1936, 30.65 feet.

U(C-2-2)23bb. Roosevelt Town, Hancock Cove, Duchesne County. Diameter $4\frac{1}{2}$ inches, depth 216 feet. Measuring point, top of tee at plug, at land surface. Pressure head: Nov. 7, 1935, 11.0 feet (found flowing); Oct. 29, 1936, 11.9 feet (found flowing).

U(C-2-3)28da. Drought Relief Administration, Upaleo, Duchesne County. Diameter 8 inches, depth 200 feet. Measuring point, top of casing, 5.6 feet below land surface. Depth to water: Nov. 7, 1935, 4.31 feet; Pressure head: Oct. 29, 1936, 0.63 feet.

U(C-2-5)2bb. Drought Relief Administration, Talmage, Duchesne County. Diameter 8 inches, depth 303 feet. Measuring point, top of casing, 2.8 feet below land surface. Depth to water: Nov. 10, 1935, 13.69 feet; Oct. 28, 1936, 8.98 feet.

U(C-2-5)2bc. Talmage School, Talmage, Duchesne County. Diameter 24 inches, depth $11\frac{1}{2}$ feet. Measuring point, top of concrete curb, at land surface. Depth to water: Oct. 28, 1936, 2.33 feet.

U(C-3-3)8cd. Henry Richins, Arcadia, Duchesne County. Diameter 2 inches, depth 140 feet. Measuring point, top of ell on casing, 1.7 feet above land surface. Pressure head: Oct. 29, 1936, 10.95 feet (found flowing).

U(C-3-3)17da. Frank Horricks, Arcadia, Duchesne County. Diameter 6 inches, depth 202 feet. Measuring point, top of casing, at land surface. Depth to water: Oct. 29, 1936, 12.00 feet.

U(C-3-4)7ca. Knight Investment Co., Duchesne, Duchesne County. Diameter 6 inches, depth 402 feet. Measuring point, top of casing, 2.4 feet above land surface. Depth to water: Oct. 28, 1936, 127.37 feet.

U(C-3-4)21aa. Knight Investment Co., Duchesne, Duchesne County. Diameter $4\frac{1}{2}$ inches, depth 261 feet. Measuring point, top of casing, 1.5 feet above land surface. Depth to water: Oct. 28, 1936, 92.23 feet.

U(C-3-4)22ba. Knight Investment Co., Duchesne, Duchesne County. Diameter 2 inches, depth 175 feet. Measuring point, top of casing, 2.0 feet above land surface. Depth to water: Oct. 28, 1936, 145.10 feet.

U(C-3-5)36dc. Jesse Clement, Duchesne, Duchesne County. Diameter 12 inches, depth 16 feet. Measuring point, bottom of hole in casing, 1.2 feet above land surface. Depth to water: Oct. 28, 1936, 5.95 feet.

U(C-4-2)5bb. Drought Relief Administration, Myton, Duchesne County. Diameter 8 inches, depth 1,120 feet. Measuring point, top of casing, 0.5 foot above land surface. Depth to water: Nov. 6, 1935, 6.0 feet; Oct. 29, 1936, 4.08 feet.

U(C-4-3)3cb. Roy Taylor, Bridgeland, Duchesne County. Diameter 3 inches, depth 200 feet. Measuring point, top of casing. Depth to water: Oct. 29, 1936, 9.38 feet.

U(D-1-1)14bb. George Hackford, LaPoint, Uinta County. Diameter 8 inches, depth 230 feet. Measuring point, top of casing, 0.8 foot below land surface. Depth to water: Nov. 9, 1935, 5.73 feet; Oct. 30, 1936, 6.15 feet.

U(D-1-1)19cc. Bennett School, Bennett, Uinta County. Diameter 8 inches, depth 450 feet. Measuring point, top of wood curb, at land surface. Depth to water: Oct. 30, 1936, 8.32 feet.

U(D-1-1)23ab. Albert Daniels, LaPoint, Uinta County. Diameter 5 inches, depth 250 feet. Measuring point, top of casing, 0.3 foot above land surface. Depth to water: Nov. 9, 1935, 14.00 feet; Oct. 30, 1936, 12.98 feet.

VIRGINIA

By O. E. Meinzer, R. C. Cady, and V. C. Fishel

The observation well program in Virginia^{1/} was continued in 1936 by the United States Geological Survey. Weekly measurements were made on the 5 wells mentioned in Water-Supply Paper 777 and on 9 other wells that were added to the program in 1936 or in the later part of 1935. Of the new wells 7 were established on the Swart farm near Fairfax, 1 on the Burke farm near Fairfax, and 1 on the Glendale farm near Catlett.

The height of the measuring point and benchmark above arbitrary datum planes for each of the Ross, Bacon, Halls Hill, and Bell wells is as follows:

Ross well: Height of measuring point above datum plane, 35.60 feet from the beginning of observation to June 22, 1936; 36.57 feet since June 22. Height of benchmark above datum plane: No. 1, 34.57 feet; no. 2, 33.34 feet.

Bacon well: Height of measuring point above datum plane, 33.60 feet from the beginning of observation to June 18, 1936; 35.52 feet since June 22. Height of benchmark above datum plane: No. 1, 34.89 feet; no. 2, 37.63 feet.

Halls Hill well: Height of measuring point above datum plane, 44.80 feet since beginning of observation. Height of benchmark above datum plane: No. 1, 45.69 feet; no. 2, 41.47 feet.

Bell well: Height of measuring point above datum plane, 24.00 feet from the beginning of observation to June 19, 1936. A garage was built on the site of the old well, and a new well was constructed 150 feet northeast on June 27, 1936. Height of measuring point of the new well above datum plane, 24.96 feet. Height of benchmark above datum plane: No. 1, 24.03 feet; no. 2, 26.64 feet.

The water levels in the Ross, Bacon, Halls Hill, and Bell wells rose from January 1, 1936, to about February 1. They declined slightly during the first part of February and then rose until about March 21, reaching on that date an average stage of about 3.7 feet above the average stage on January 1. The precipitation was below normal during the summer and fall, and as a result the water levels, except in the Bell well, declined gradually from about March 21 to about December 1. The decline averaged about 6.5 feet in the Ross, Bacon, and Halls Hill wells. The water level in the Bell well responded to some of the rains during

this period but nevertheless declined about 8 feet from March to December. Precipitation in December caused the water levels to rise about 0.2 foot in the Ross well, 1.2 feet in the Bacon well, 0.2 foot in the Halls Hill well, and more than 5 feet in the Bell well. The water levels on December 31, 1936, in the Ross, Bacon, Halls Hill and Bell wells were 1.78, 0.91, 2.0, and 0.20 feet respectively lower than on January 1, 1936.

The Glendale well, O. E. Meinzer, owner, is $1\frac{1}{2}$ miles northeast of Catlett, Fauquier County, Va., on Highway 233. It is a 6-inch drilled well, 94 feet deep, near the northeast corner of a dairy barn. Windmill tower still over the well but pump removed and well not used. Measuring point is top of casing, about 1.5 feet above land surface, 1.41 feet above benchmark A and 1.52 feet above benchmark B. Benchmark A is a cross cut into concrete floor near northeast corner of the barn; benchmark B is cross cut into concrete foundation of adjacent silo. The well is on a gentle upland slope near small spring-fed valley. Measurements of water level in well and of precipitation recorded by rain gage at same place are made by J. E. Johnson.

Periodic measurements of water level in this well were begun on October 6, 1935, at which time the water level stood 15.6 feet below the measuring point. The precipitation was light during October, and there was practically no change in the water level until November 1. Precipitation of more than 6 inches in November resulted in a rise of the water level of 4.5 feet by November 17. The water level then declined 2.2 feet by December 29 but regained 1.6 feet by the middle of January 1936, at which time the water level stood only 11.6 feet below the measuring point. Precipitation in March caused the water level to rise to a stage of 10.4 feet below the measuring point, the highest stage of record. The water level then declined persistently, as the result of the dry summer and fall, until December 6, when a stage of 16.0 feet below the measuring point was recorded. Subsequent recovery in December carried the water level on January 3, 1937, to a stage 14.09 feet below the measuring point, about 1 foot lower than at the beginning of 1936.

The Burke well is in Fairfax County about 0.2 mile north of the Lee Highway and 1.7 miles west of the junction of the Lee Highway and United States Highway 50. The well is situated near an abandoned house on the top of a hill about 400 feet from Difficult Run. It is an abandoned dug well, cased with rock. The measuring point is the top edge of a 2-inch board covering the well.

The first measurement of the water level in this well was made November 9, 1935, at which time the water level was 34.85 feet below the measuring point. Two other measurements were made in November, but no additional measurements were made until October 23, 1936, when the water level stood 35.90 feet below the measuring point. Weekly measurements were begun in October, 1936. The water level declined to a stage of 36.62 feet below the measuring point on December 4, 1936, but recovered by December 31 to 35.16 feet below the measuring point.

Eight shallow wells on the Swart farm about 1.5 miles from Fairfax, on United States Highway 50, are located in a line 5, 10, 35, 60, 85, 110, 135, and 162 feet respectively from Difficult Run. Well 5 is about 150 feet below the highway bridge. The number of each well is the distance of that well from the stream. Continuous water-stage recorders are operated on wells 5 and 162, and weekly measurements are made on the other wells. A continuous water-stage recorder is operated on the stream near well 5. Well 162 is the Swart well given in Water-Supply Paper 777.

During times of high water level the ground water in the vicinity of the Swart wells moves toward Difficult Run. At low stages the direction of movement of the ground water apparently changes, inasmuch as the water levels in wells 5 and 10 generally decline below the stream level. During these periods of low water levels ground-water divides occur at or near wells 35 and 135. Thus the ground water apparently moves toward wells 10, 60, and 162. It is not known whether the movement of ground water is exactly parallel to the line of wells.

Water levels in observation wells in Virginia near Washington, D. C., and

weekly precipitation at the Weather Bureau in Washington

(The water levels are given in feet below the measuring points)

Date	Ross	Bacon	Halls Hill	Bell	Precipitation (inches)
Jan. 1, 1936	23.45	16.08	.....	3.73	....
4	22.89	14.97	23.39	1.51	2.63
11	21.66	13.95	23.22	1.76	.87
18	21.21	13.78	22.60	1.82	.85
25	20.79	13.31	.....	2.62	1.44
Feb. 1	21.01	13.60	22.36	3.14	.08
8	21.40	13.82	.....	2.85	1.32
15	21.57	13.52	22.07	1.21	1.93
21	21.46	13.23	21.98	1.94	.40
29	21.45	13.10	21.78	1.65	.18
Mar. 7	21.34	13.41	21.65	1.84	.07
14	20.48	12.00	20.39	1.66	2.24
21	19.34	11.50	19.91	1.36	1.38
28	19.58	11.79	20.02	1.50	.78
Apr. 4	19.90	12.02	19.95	2.10	.40
11	19.65	11.82	19.43	1.77	1.50
18	19.80	11.96	19.24	2.22	.01
25	20.23	12.28	19.40	2.35	.04

Water levels and weekly precipitation--Continued

Date	Ross	Bacon	Halls Hill	Bell	Precipitation (inches)
May 2, 1936	20.38	12.39	19.30	2.44	.03
9	20.43	12.43	19.25	2.20	2.44
16	20.61	12.75	19.35	2.36	1.29
23	20.77	13.10	19.54	2.69	1.44
30	20.81	13.35	19.25	3.15	.15
June 16	a 21.41	13.45	19.78	....	1.25
19	21.60	b 15.60	20.00	....	.00
27	22.81	15.98	20.26	c 4.17	.24
July 3	23.14	16.25	20.61	3.95	.94
10	23.32	16.56	20.88	5.04	.42
17	23.60	16.90	21.24	5.49	.06
24	23.72	17.18	21.47	6.16	2.46
31	24.08	17.48	22.05	5.53	.99
Aug. 7	24.25	17.69	22.27	6.44	.24
14	24.44	17.96	22.53	6.98	.06
21	24.59	18.22	22.92	....	1.89
28	24.77	18.24	23.24	....	1.12
Sept. 4	24.89	18.56	23.44	....	.51
11	25.02	18.75	23.70	....	.02
18	25.11	18.95	23.93	....	Trace
25	25.29	19.17	24.35	....	.10
Oct. 2	25.39	19.33	24.62	....	1.69
9	25.50	19.45	24.76	....	.99
16	25.61	19.60	25.07	11.87	.40
23	25.74	19.66	25.33	9.15	.19
30	25.81	19.71	25.39	9.40	.08
Nov. 6	25.94	19.80	25.84	9.77	.42
13	26.01	19.85	25.87	9.84	.34
20	26.08	19.91	26.04	9.96	Trace
27	26.22	20.00	26.39	10.35	Trace
Dec. 4	26.31	20.09	26.60	9.97	.90
11	26.32	19.84	26.60	7.75	2.07
18	26.37	19.61	26.76	4.72	.55
24	26.23	19.02	26.71	4.33	1.25
31	26.20	18.91	26.57	4.89	.46

a Measuring point raised 0.97 foot on June 16.

b Measuring point raised 1.92 feet on June 19.

c New well. Measuring point 0.96 foot higher than measuring point on former well.

Water levels in the Glendale well near Catlett, Va.

(The water levels are given in feet below the measuring point)

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Oct. 6, 1935	15.6	Mar. 15, 1936	10.4	Aug. 16, 1936	15.19
13	15.8	22	10.8	23	15.34
20	15.6	29	10.9	30	15.35
27	15.7	Apr. 4	12.6	Sept. 6	15.21
Nov. 3	15.5	12	12.3	13	15.70
10	15.4	19	12.7	20	15.69
17	11.0	26	13.9	27	15.88
24	11.0	May 3	13.5	Oct. 4	15.85
Dec. 1	13.1	10	13.8	11	15.58
8	13.3	17	13.8	18	15.38
15	12.7	23	13.9	25	15.62
22	13.1	31	13.9	Nov. 1	15.65
29	13.2	June 7	14.18	7	15.60
Jan. 5, 1936	12.9	14	14.40	15	15.40
12	11.9	21	14.09	22	15.65
19	11.6	28	14.45	29	15.44
26	12.3	July 5	14.67	Dec. 6	16.00
Feb. 2	12.7	12	14.70	13	15.93
9	13.0	19	14.74	20	14.54
16	12.0	26	15.13	27	14.72
23	13.4	Aug. 2	15.14	Jan. 3, 1937	14.09
Mar. 1	13.3	9	15.17		
8	13.5				

Water levels in the Burke well near Fairfax, Va.

(The water levels are given in feet below the measuring point)

Date	Depth to water (feet)	Date	Depth to water (feet)	Date	Depth to water (feet)
Nov. 9, 1935	34.85	Oct. 30, 1936	36.01	Dec. 11, 1936	36.44
16	34.87	Nov. 6	36.17	18	36.10
23	34.75	13	36.26	24	35.48
Oct. 23, 1936	35.90	Dec. 4	36.62	31	35.16

Altitude of land surface and measuring points

at the Swart wells, Fairfax County, Va.

(Altitudes are given in feet with respect to a benchmark
to which was assigned an arbitrary altitude)

Well	Altitude of land surface	Altitude of measur- ing point	Well	Altitude of land surface	Altitude of measur- ing point
Stream well	445.6	448.3	85	444.4	446.28
5	445.5	448.26	110	444.3	446.26
10	445.3	447.21	135	444.5	446.43
35	445.0	446.88	162	444.6	a 448.79
60	444.3	446.30			

Water levels in the Swart wells, Fairfax County, Va.

(Add 400 to convert water levels to feet above assumed datum)

Date	Well								
	Stream well	5	10	35	60	85	110	135	162
1936									
Jan. 4	2.58	2.24	....	....	....	....	....	....	5.51
11	2.53	2.04	....	....	....	....	....	....	5.28
18	2.50	2.01	....	....	....	....	....	....	5.05
25	2.47	....	....	....	....	....	....	....	4.39
Feb. 1	2.47	....	....	....	....	....	....	....	4.12
8	2.47	2.64	....	....	....	....	....	....	4.73
15	2.79	3.23	....	....	....	....	....	....	5.46
21	2.78	2.72	....	....	....	....	....	....	4.95
29	2.38	2.90	....	....	....	....	....	....	5.26
Mar. 7	2.37	2.84	....	....	....	....	....	....	4.92
14	2.53	3.04	....	....	....	....	....	....	5.31
21	2.65	3.33	....	....	....	....	....	....	5.40
28	2.58	3.26	....	....	....	....	....	....	5.18
Apr. 4	2.91	2.40	....	....	....	....	....	....	4.87
11	2.51	3.11	....	....	....	....	....	....	5.14
18	2.43	2.59	....	....	....	....	....	....	4.60
25	2.42	2.43	....	....	....	....	....	....	4.36
May 2	2.38	2.35	....	....	....	....	....	....	4.24
9	2.42	2.49	....	....	....	....	....	....	4.39
16	2.42	2.56	....	....	....	....	....	....	4.92
23	2.28	2.38	....	....	....	....	....	....	4.19
30	2.25	2.14	....	....	....	....	....	....	4.05
June 16	2.20	2.73	....	....	....	....	....	....	4.73
19	2.14	2.32	....	....	....	....	....	....	4.32
27	2.12	2.08	....	....	....	....	....	....	4.18
July 3	2.12	2.30	....	....	....	....	....	....	4.38
10	2.08	1.87	1.86	1.97	1.78	1.95	3.80	4.63	3.87
17	2.09	1.69	1.63	1.65	1.46	1.84	3.86	4.41	3.64
24	2.11	2.24	1.88	2.12	1.18	4.48	4.37	....	4.33
31	2.08	2.24	2.39	2.76	2.64	3.08	4.24	4.43	4.17
Aug. 7	2.07	1.89	1.89	1.95	1.87	2.47	4.25	4.41	3.95
14	2.06	1.72	1.69	1.79	1.60	2.26	3.88	4.31	3.65
21	2.06	1.56	1.45	1.56	1.31	1.76	3.68	3.95	3.41
28	2.07	2.55	2.75	3.06	3.19	4.57	4.47	4.57	5.27

a 447.61 feet to June 19, 1936

Water levels in the Swart wells, Fairfax County, Va.--Continued

Date	Well								
	Stream well	5	10	35	60	85	110	135	162
1936									
Sept. 4	2.01	2.08	2.11	2.31	2.19	3.85	4.30	4.58	4.04
11	2.05	1.83	1.81	1.97	1.78	3.30	4.05	4.49	3.76
18	2.04	1.68	....	....	....	....	....	....	3.50
25	2.04	1.57	1.43	1.56	1.30	2.50	3.64	3.90	2.37
Oct. 2	2.06	2.29	2.19	1.66	1.89	4.23	4.21	4.59	3.11
9	2.06	2.00	2.05	2.26	1.12	3.54	4.06	4.32	3.81
16	2.05	2.20	1.24	2.51	2.36	3.53	4.16	4.43	3.93
23	2.06	2.25	2.40	2.68	2.58	3.50	4.21	4.49	4.09
30	2.08	2.16	2.24	2.40	2.35	3.06	4.18	4.47	3.99
Nov. 6	2.11	2.47	2.51	2.84	2.98	3.94	4.38	4.59	4.17
13	2.13	2.42	2.61	2.88	2.89	3.48	4.33	4.60	4.15
20	2.17	2.30	2.34	2.51	2.50	3.17	4.04	4.51	4.06
27	2.17	2.21	2.29	2.44	2.43	3.04	4.15	4.48	3.99
Dec. 4	2.09	2.81	2.95	3.39	3.60	4.19	4.47	4.64	4.54
11	2.09	2.84	3.09	3.58	3.70	4.36	4.69	4.69	4.77
18	2.09	2.86	3.20	3.72	3.84	4.29	4.80	4.69	4.78
24	2.10	2.59	2.83	3.19	3.35	3.96	4.75	4.68	4.64
31	2.16	2.70	2.81	3.19	3.33	4.31	4.71	4.70	4.86

WASHINGTON

PALOUSE RIVER AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel and J. P. Bonner

The observation well program in the Palouse river area,^{1/} in Whitman County, Wash., and Latah County, Idaho, was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service, W. A. Rockie, project manager. Water-level measurements were made weekly in 52 wells by members of the Geological Survey and the Soil Conservation Service, except for a period during the summer of 1936, when only monthly measurements were made. Two automatic water-stage recorders have been in use since the beginning of the program. One of them has been in continuous operation on well 20. The other has been used for shorter periods on some of the other wells. Approximately 2,250 measurements were made during the year ending December 31, 1936.

The average water levels given in the present report do not correspond to those given in Water-Supply Paper 777, because wells 5 and 19 have been excluded from the list of wells used in computing the new averages, and wells 8, 14, 17, 28, and 30 have been added to the list. The average water levels for the entire period of record are given in the present report and were obtained by averaging the water levels in 25 wells (1, 2, 4, 6, 7, 8, 11, 12, 14, 17, 18, 20, 20a, 21, 23, 24, 26, 27, 28, 30, 31, 32, 35, 36, and 37).

The measurements of 14 wells (38, 39, 40, 41, 42, 43, 44, 46, 47, 48, 49, 51, 53, and 54), which were begun in 1936, are included in this report but were not used in computing the average water levels. The measurements of 13 wells (1S, 2S, 3S, 4S, 5S, 6S, 1N, 2N, 3N, 1E, 3E, 4E, and 5E), located on the Pacific Northwest Soil Erosion Experiment Station farm, are also included in this report.

The water levels, measuring points, and benchmarks for each of wells 1 to 37 are expressed in feet above an arbitrary datum 10 feet below the water level in that well on January 1, 1935. For wells 38 to 54, which were begun in April 1936, the water levels were assigned the same heights on the day of their first measurements as the average on the same day of the water levels in wells 1 to 37. The water levels in the wells on the Experiment Station farm are expressed in feet above sea level.

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935, U. S. Geol. Survey Water-Supply Paper 777, pp. 260-263, 1936.

The water levels in all the wells rose an average of about 1.5 feet from the beginning of the measurements on November 5, 1934, to January 1, 1935, and rose about 3.8 feet more during January. This rise continued until April 22, at which time the highest average stage was reached for the period of record beginning November 1934 and ending December 31, 1936, which was about 5.8 feet higher than on January 1, 1935. The water levels declined an average of 8.0 feet by October 8, when they were at the lowest stage for the year. They rose and declined intermittently for the rest of the year and were about 0.7 feet higher on January 1, 1936, than on October 8, 1935.

The water levels rose an average of about 5.5 feet from January 1, 1936 to March 17, when they reached the highest average stage during 1936, which was 1.88 feet lower than the high stage reached in April 1935. There was a gradual average decline of nearly 7 feet from March 17 to October 13, but the water levels recovered about 0.6 foot by January 1, 1937.

The average water level on January 1, 1937, stood about 0.8 foot lower than on January 1, 1936 and 2.2 feet lower than on January 1, 1935.

Experiment Station Wells

Thirteen wells are located on the Pacific Northwest Soil Erosion Experiment Station farm, which includes the NW $\frac{1}{4}$ and the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 15 N., R. 45 E. Well 1N is located 690 feet west and 270 feet south from the southeast corner of the NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30; 2N is 730 feet west and 250 feet north from the same corner; 3N is 10 feet west and 325 feet north from 2N; 1S is 40 feet west and 155 feet south from 1N; 6S is located on the south edge of the farm and is 1,420 feet east of the southwest corner of the farm. Wells 2S, 3S, 4S, and 5S are located in a line between 1S and 6S. Wells 2S, 3S, 4S, 5S, and 6S are 1,555, 345, 580, 800, and 1,040 feet respectively from 1S. Well 5E is located 320 feet west and 1,000 feet south from the southeast corner of the NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30. Wells 1E, 3E, and 4E are located in a line between 1N and 5E. Wells 1E, 3E, 4E, and 5E are 420, 905, 1,095, and 1,250 feet respectively from 1N.

A summary of the fluctuations of the water levels in these wells is given in the following table, which shows the highest and lowest water levels between December 14, 1934, and December 31, 1936, and the range in fluctuation during that period.

Experiment Station Wells

Well no.	Highest water level (feet above sea level)	Lowest water level (feet above sea level)	Range in fluctuation (feet)
1S	516.47	510.73	5.74
2S	516.02	510.44	5.58
3S	508.45	502.11	6.34
4S	499.39	495.79	3.60
5S	507.37	500.12	7.25
6S	520.15	506.59	13.56
3N	503.03	498.43	4.60
2N	509.38	504.94	4.44
1N	517.25	511.31	5.94
1E	518.27	512.52	5.75
3E	535.90	524.11	11.79
4E	544.14	538.68	5.46
5E	550.17	538.34	11.83

Wells in the South Fork area of the Palouse River,

Washington and Idaho

(The depth to the water level given in the next to last column is the depth below the measuring point on January 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Depth to water level (feet)	Height of measuring point (feet)
1	T. Griffin, NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 14 N., R. 45 E.	18	7.50	17.50
2	A. Luck, W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 14 N., R. 45 E.	30	9.40	19.40
4	Mrs. Strevey, NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 15 N., R. 45 E.	39	25.70	35.70
6	--- O'Donnel, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 15 N., R. 46 E.	18	10.20	20.20
7	C. Stirewalt, NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 15 N., R. 46 E.	15	8.30	18.30
8	School district, SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 40 N., R. 5 W.	42	23.85	33.85
11	U. S. Geological Survey, SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 15 N., R. 45 E.	15.8	5.40	15.40
12	G. Mix, SE corner NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 39 N., R. 6 W.	22	15.70	25.70
14	J. I. Heick, SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 32, T. 40 N., R. 5 W.	44.5	36.94	46.94
17	Great Northern Ry., NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 14 N., R. 45 E.	13	9.00	19.00
18	F. Druffel, center E $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 13 N., R. 45 E.	15	7.80	17.80
20	W. Benedict, NE corner SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 14 N., R. 44 E.	26	12.00	22.00
20a	W. Benedict, NE corner SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 14 N. R. 44 E.	12	3.00	13.00
21	J. E. Woods, center E $\frac{1}{2}$ NW $\frac{1}{4}$ sec. 11, T. 14 N., R. 45 E.	20	6.00	16.00
23	U. S. Geological Survey, NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 14 N., R. 45 E.	15	8.00	18.00
24	C. J. Bowers, NE corner NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T. 14 N., R. 46 E.	15	2.45	12.45
26	A. Snow, NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 39 N., R. 5 W.	31.1	20.20	30.20
27	--- Laney, SW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 39 N., R. 5 W.	36.3	7.80	17.80
28	P. Nelson, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 39 N., R. 5 W.	20	18.40	28.40

Wells in the South Fork area of the Palouse River,

Washington and Idaho--Continued

Well no.	Owner and location	Depth (feet)	Depth to water level (feet)	Height of measuring point (feet)
30	C. Oleson, NW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 40 N., R. 5 W.	18	5.00	15.00
31	W. Buttler, NW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 40 N., R. 5 W.	24	3.49	13.49
32	U. S. Geological Survey, center of N. line, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 39 N., R. 5 W.	21.5	18.40	28.40
35	R. Barr, center SW $\frac{1}{4}$ sec. 17, T. 15 N., R. 44 E.	27	15.45	25.45
36	School district, SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T. 15 N., R. 44 E.	18	6.48	16.48
37	U. S. Geological Survey SE. corner NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 40 N., R. 45 E.	20	12.00	22.00
38	W. Boyd, SW $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 15 N., R. 45 E.	22	10.77	24.36
39	A. and H. Snow, SE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 14 S., R. 46 E.	24	16.23	29.99
40	E. Harms, NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 14 N., R. 44 E.	31	7.15	20.74
41	E. Snow, SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 39 N., R. 5 W.	172	97.91	111.67
42	South Mascon School, NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 39 N., R. 5 W.	129	114.73	128.49
43	F. Jennings, S $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 13 N., R. 45 E.	21	5.51	19.10
44	J. L. Naylor, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 40 N., R. 5 W.	88	60.27	73.86
46	C. and M. Stirewalt, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 15 N., R. 45 E.	51	29.54	41.29
47	Whelan School, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 15 N., R. 45 E.	12	7.53	20.03
48	Ida Peterson, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 39 N., R. 5 W.	76	40.81	52.79
49	S. Gerke, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 39 N., R. 5 W.	58	24.50	36.48
51	G. Anderson, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 14 N., R. 46 E.	124.6	109.90	121.88
53	G. P. Mix, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 39 N., R. 5 W.	63.5	41.74	53.12
54	W. Boyd, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30, T. 15 N., R. 46 E.	31.5	19.74	31.36
1S	Pacific Northwest Soil Erosion Experiment Station	....	77.08	2,589.02
2S	do.	....	49.31	2,561.16
3S	do.	....	19.27	2,522.99
4S	do.	....	1.52	2,500.51
5S	do.	....	11.02	2,513.27
6S	do.	....	25.00	2,532.16
1E	do.	....	73.78	2,587.80
3E	do.	....	24.77	2,550.35
4E	do.	....	37.65	2,577.63
5E	do.	....	65.71	2,605.90
1N	do.	....	39.58	2,552.07
2N	do.	....	7.23	2,512.20
3N	do.	....	27.54	2,526.59

Water levels in wells in the South Fork area of the Palouse River
in Washington and Idaho, in feet above the arbitrary datum

Date	1	2	4	6	7	8	11	Average
1934								
Nov. 5	8.67	4.47	9.40	.....	9.48	8.46	.....	.....
12	8.50	4.96	9.30	.....	9.40	8.52	.....	.....
19	8.60	5.32	9.48	.....	9.66	8.67	.....	.....
26	8.62	6.08	9.39	.....	9.30	8.46	.....	.....
Dec. 3-6	8.81	7.56	9.37	.....	9.22	8.55	.....	.....
10-11	8.65	8.07	9.42	.....	9.26	8.47	.....	.....
17-18	8.80	8.60	9.43	.....	9.26	8.52	.....	.....
24	9.87	9.26	9.92	.....	9.65	9.51	.....	.....
29	9.83	9.77	10.02	.....	9.90	9.95	.....	.....
1935								
Jan. 1-3	.....	.....	.....	10.02	.....	.....	9.97	.....
7-8	10.27	10.68	10.31	10.83	.....	10.28	10.55	10.57
14-15	10.38	11.11	10.50	11.38	10.40	11.00	10.86	11.07
21-25	.....	11.38	11.30	.....	.....	10.97	.....	12.23
29-30	11.24	13.06	11.36	13.12	11.49	10.21	10.86	13.79
Feb. 4-5	11.02	12.35	11.23	13.67	11.44	12.52	10.80	13.85
11-12	10.88	12.50	11.45	13.67	11.52	12.62	10.65	13.96
18-19	11.10	12.60	11.26	14.00	11.40	11.93	10.74	13.92
25-26	11.15	12.69	11.63	14.23	11.60	12.29	10.73	14.25
Mar. 4-5	10.95	12.70	11.52	14.42	11.96	12.95	10.90	14.16
11-12	11.07	12.75	11.32	.....	11.61	12.30	.....	14.55
18-19	11.31	13.04	11.45	15.02	12.08	12.80	10.86	14.47
26	11.52	13.16	11.54	.....	.....	12.60	.....	.....
Apr. 1	12.15	13.36	12.10	15.07	12.48	13.43	11.23	15.32
8-9	12.87	13.70	12.53	15.30	13.26	13.94	11.30	15.78
15-19	12.07	13.41	12.80	15.33	12.62	14.00	10.80	15.66
22	12.10	13.35	13.16	15.58	.....	13.98	.....	15.88
29-30	11.54	13.16	13.40	15.64	12.66	13.95	10.60	15.23
May 6-7	11.04	12.91	13.44	15.18	12.23	13.50	10.24	14.75
13	10.64	12.70	13.41	14.51	11.85	13.11	10.03	14.25
20-21	10.40	12.42	13.30	13.77	11.49	12.87	9.80	13.85
27-28	10.19	11.75	13.18	12.58	11.59	12.65	9.70	13.52
June 3-5	10.00	11.11	12.96	11.41	11.22	12.24	9.46	13.05
10-12	9.90	10.72	12.71	10.48	11.16	11.76	9.31	12.75
17-19	9.89	10.54	12.46	9.68	11.13	11.45	9.20	12.47
24-26	9.78	10.36	12.10	8.80	10.94	11.25	8.91	12.02
July 1-5	9.76	10.28	11.81	8.20	10.90	11.13	8.78	11.70
8-10	9.70	10.20	11.40	7.42	10.80	10.90	8.48	11.41
15	9.57	9.65	11.13	7.15	10.78	10.73	8.27	11.02
22	9.46	8.36	10.84	6.59	10.70	10.49	8.10	10.75
29-30	9.32	6.89	10.52	5.90	10.45	10.17	7.83	10.29
Aug. 5-7	9.20	5.45	10.29	5.58	10.47	9.90	7.57	9.96
12-13	9.03	3.66	10.01	5.10	10.30	9.71	7.42	9.47
19-20	8.98	2.89	9.84	4.88	10.23	9.58	7.35	9.27
26-27	8.89	2.37	9.69	4.49	10.18	9.55	7.13	8.95
Sept. 3	8.77	1.68	9.53	4.24	10.16	9.34	7.06	8.67
9	8.74	1.00	9.45	4.06	10.13	9.12	6.91	8.37
16	8.69	.85	9.42	3.85	10.00	8.85	6.92	8.18
23-24	8.66	.68	9.39	3.80	10.03	9.00	6.95	8.09
30-Oct. 2	8.59	.50	9.38	3.61	9.94	9.04	6.96	7.94
Oct. 7-8	8.62	1.04	9.41	3.55	9.65	8.83	7.10	7.88
14-15	8.65	1.70	9.56	3.84	10.14	9.02	7.34	8.02
21-22	8.61	2.58	9.54	3.57	9.87	8.92	7.35	7.96
28-29	8.63	3.28	9.59	3.92	10.07	9.05	7.51	8.18
Nov. 4-5	8.56	3.97	9.57	3.46	9.63	8.85	7.40	8.05
11-12	8.61	4.35	9.61	3.70	9.73	8.78	7.45	8.22
18-19	8.54	4.69	9.64	3.66	9.70	8.68	7.45	8.12
25-26	8.54	5.29	9.57	3.59	9.51	8.53	7.55	8.06
2-Dec. 4	8.53	6.28	9.58	3.59	9.53	8.57	7.61	8.17
Dec. 9-11	8.54	7.34	9.64	3.65	9.54	8.73	7.65	8.27
16-17	8.53	8.10	9.59	3.47	9.38	8.62	7.64	8.25
23	8.51	8.56	9.58	3.65	9.49	8.62	7.79	8.34
30-31	8.85	9.30	9.72	3.73	9.65	8.77	7.88	8.50
1936								
Jan. 6	9.94	10.22	10.19	6.56	9.91	9.12	8.03	9.10
13-14	10.63	11.14	10.77	8.75	10.38	10.24	8.73	10.78
20	10.46	11.57	10.98	8.12	10.17	10.67	8.77	10.78
27	10.47	11.90	10.78	8.05	10.24	10.87	9.01	10.71

Water levels in wells in the South Fork area of the Palouse River

in Washington and Idaho--Continued

Date	1	2	4	6	7	8	11	Average
1936								
Feb. 3	10.31	12.12	10.63	7.12	10.14	10.73	9.03	10.51
10	10.12	12.19	10.41	.....	9.95	10.53	.....	.....
17-19	9.99	12.27	10.30	6.31	9.83	10.30	8.89	10.31
24-25	10.55	12.68	10.49	6.45	10.31	10.60	9.11	10.88
Mar. 2-5	11.41	13.56	10.90	9.02	11.25	10.97	10.70	12.78
9-10	11.43	13.68	11.27	11.22	11.36	11.91	10.46	13.76
16-17	11.35	13.52	11.22	11.47	11.37	12.24	10.50	14.00
23	10.99	13.36	11.08	11.46	11.49	12.39	10.24	13.88
30	11.23	13.36	11.04	11.68	11.50	12.09	10.49	13.76
Apr. 6	11.27	13.24	10.92	11.63	11.31	11.70	10.35	13.59
13-14	10.78	13.01	10.79	11.25	11.30	11.95	10.14	13.45
20	10.50	12.89	10.60	10.08	11.17	11.81	9.95	13.02
27-28	10.29	12.73	10.46	9.47	11.16	11.70	9.91	13.26
May 4-5	10.24	11.59	10.39	8.47	11.13	11.54	9.71	12.62
11-13	10.09	12.08	10.25	8.66	10.95	11.42	9.77	12.50
18-19	9.96	11.68	10.15	8.38	10.83	11.27	9.79	12.28
25-26	9.86	11.11	10.04	7.72	10.64	11.09	9.62	11.98
June 1-2	9.77	10.90	9.98	7.35	10.59	10.83	9.58	11.75
8-9	9.68	10.68	9.91	6.88	10.56	10.61	9.37	11.62
15-16	9.61	10.51	9.79	6.55	10.54	10.54	9.22	11.38
22-23	9.37	10.25	9.62	6.16	10.43	10.22	9.08	11.14
29-30	9.21	10.11	9.46	5.72	10.32	10.08	8.93	10.85
July 6-7	9.04	9.94	9.34	5.33	10.26	9.75	8.70	10.58
13-14	8.93	9.69	9.14	5.01	10.16	9.70	8.49	9.85
Aug. 4-6	8.60	3.62	8.64	3.98	9.90	9.26	7.95	8.38
Sept. 1-2	8.59	.97	8.24	3.16	9.65	8.88	7.23	7.24
8-9	8.59	1.60	8.32	3.12	9.54	8.80	7.27	7.36
14-16	8.59	1.62	8.38	3.06	9.59	8.69	7.29	7.34
21-23	8.50	1.14	8.29	3.00	9.55	8.59	7.18	7.16
28-30	8.49	.81	8.27	2.84	9.41	8.61	7.00	7.12
Oct. 5-7	8.46	1.08	8.28	2.75	9.36	8.55	7.24	7.12
12-13	8.45	1.50	8.35	2.72	9.39	8.59	7.31	7.08
19-20	8.49	2.66	8.38	2.76	9.49	8.60	7.45	7.16
26-27	8.49	3.61	8.41	2.70	9.26	8.52	7.42	7.20
Nov. 2-3	8.46	4.10	8.42	2.62	9.14	8.38	7.37	7.19
9-10	8.47	4.69	8.46	2.58	9.18	8.23	7.47	7.25
16-17	8.46	5.29	8.48	2.57	9.14	8.14	7.41	7.28
23-24	8.47	6.39	8.44	2.57	.....	8.19	7.57	7.30
30-Dec. 1	8.47	7.23	8.41	2.65	.....	8.14	7.45	7.37
Dec. 7-8	8.53	8.00	8.53	2.80	.....	8.29	7.65	7.57
14-16	8.47	8.52	8.58	2.70	.....	.....	7.59	7.58
22-23	8.50	9.37	8.66	2.68	.....	8.22	7.64	7.68
29-30	8.55	9.76	8.78	2.80	.....	8.26	7.66	7.76

Date	12	14	17	18	20	20a	21	23	24
1934									
Nov. 5-7	10.12	10.59	9.30	.....	.....	.....	.....	9.39	.....
12-14	9.86	10.55	9.30	.....	.....	.....	.....	9.45	.....
19-21	9.88	10.52	9.34	.....	.....	.....	.....	9.49	.....
26-28	9.74	10.40	9.34	.....	.....	.....	.....	9.53	.....
Dec. 3-6	9.56	10.25	9.37	.....	.....	.....	.....	9.67	.....
10-12	9.34	10.07	9.37	.....	.....	.....	.....	9.67	.....
17-19	9.42	10.02	9.47	.....	.....	.....	.....	9.69	.....
24-26	9.66	10.01	9.87	.....	.....	.....	.....	9.80	.....
29	9.87	10.02	.....	.....	.....	.....	.....	.....	.....
1935									
Jan. 1-3	.....	.....	10.07	10.07	9.92	9.78	.....	10.14	10.00
7-9	10.10	9.99	10.43	10.60	12.39	10.36	9.88	10.70	10.13
14-16	10.45	11.00	10.81	10.88	14.17	10.02	9.66	11.35	10.07
21-25	.....	13.97	13.75	11.96	14.40	.....	.....	11.55	10.17
29-31	16.81	30.37	14.02	12.33	17.40	10.60	.....	13.11	10.07
Feb. 4-6	18.94	33.76	13.75	12.45	17.23	10.56	11.45	12.73	10.07
11-13	18.75	37.59	12.72	12.51	17.17	10.56	.....	12.38	9.97

Water levels in wells in the South Fork area of the Palouse River
in Washington and Idaho--Continued

Date	12	14	17	18	20	20a	21	23	24
1935									
Feb. 18-20	18.47	38.23	12.50	12.83	17.36	10.60	.....	12.30	10.05
25-27	18.70	39.00	14.25	13.05	17.33	10.55	.....	12.33	9.95
Mar. 4-6	18.70	38.42	14.33	13.06	17.18	10.40	10.72	12.20	10.01
11-14	19.13	39.56	14.91	13.93	18.45	10.68	.....	12.32	10.03
18-20	20.06	40.18	14.90	13.63	17.80	10.46	10.74	12.67	10.00
26-27	.....	40.29	15.02	14.23	18.31	10.61	.....	12.77	10.08
Apr. 1-3	21.46	41.28	15.47	14.08	18.42	10.57	.....	13.04	10.03
8-10	22.02	41.60	15.91	14.36	18.92	10.66	12.25	13.20	10.13
15-19	21.78	41.62	15.66	14.24	18.74	10.63	.....	13.07	10.07
22-24	21.99	41.66	15.40	14.00	18.37	10.60	12.08	12.94	10.04
29-May 1	21.70	41.60	14.40	13.43	17.55	10.45	11.70	12.70	9.90
May 6-8	21.31	41.28	12.60	12.97	16.98	10.37	11.22	12.30	9.65
13-15	20.97	41.33	11.46	12.52	16.50	10.34	10.89	12.00	8.75
20-22	20.61	40.88	11.18	12.25	16.10	10.23	10.66	11.77	8.40
27-29	20.37	40.80	10.85	11.81	15.41	10.10	10.47	11.46	7.88
June 3-5	19.94	40.28	10.60	11.40	14.56	9.90	10.21	10.98	7.39
10-12	19.60	40.16	10.36	11.16	13.88	9.89	10.00	10.69	7.32
17-19	19.30	39.96	10.34	10.91	13.42	9.91	9.78	10.35	6.89
24-26	18.91	38.52	10.20	10.54	11.62	9.78	9.48	10.03	6.97
July 1-5	18.49	39.22	10.16	10.28	10.47	9.85	9.00	9.88	6.31
8-11	18.10	38.85	10.92	10.04	9.90	9.84	8.94	9.56	6.30
15-17	17.76	38.36	9.91	9.47	8.77	9.81	8.67	9.36	6.19
22-24	17.29	37.71	9.80	8.79	7.57	9.80	8.53	9.01	5.94
29-31	16.34	37.00	9.70	8.50	6.65	9.85	8.44	8.90	5.73
Aug. 5-7	15.31	35.87	9.38	8.22	5.82	9.75	8.38	8.47	5.47
12-14	14.67	34.14	9.01	7.79	4.96	9.67	8.30	8.12	5.32
19-21	14.14	31.35	8.99	7.73	4.46	9.69	8.26	7.82	5.15
26-28	13.60	28.33	8.80	7.45	4.10	9.70	8.19	7.51	5.03
Sept. 3-4	13.07	25.50	8.90	7.24	3.94	9.69	8.15	7.28	4.91
9-11	12.79	22.33	9.02	7.09	3.80	9.72	.....	6.95	4.82
16-18	12.43	20.68	8.95	7.20	3.58	9.86	8.12	6.89	4.68
23-25	12.27	19.28	9.07	7.13	3.57	9.85	8.11	6.89	4.61
30-Oct. 2	11.46	18.18	8.73	7.07	3.67	9.87	8.13	7.02	4.55
Oct. 7-9	11.28	17.27	8.59	7.30	3.94	9.97	8.16	7.03	4.39
14-16	11.15	16.54	8.90	7.54	4.48	10.05	8.20	7.60	4.44
21-23	10.84	15.87	8.94	7.74	4.77	10.12	8.22	7.75	4.53
28-30	10.56	15.30	9.03	7.93	5.78	10.17	9.25	7.96	4.59
Nov. 4-6	10.35	14.84	9.23	8.12	6.17	10.22	8.29	8.02	4.68
11-13	10.20	14.40	9.32	8.29	6.75	10.25	8.33	8.17	4.81
18-20	10.11	14.09	9.33	8.45	6.98	10.21	8.35	8.18	5.05
25-27	9.83	13.73	9.23	8.56	7.25	10.21	8.33	8.26	4.95
Dec. 2-4	9.56	13.42	9.32	8.70	7.64	10.26	8.34	8.35	5.03
9-11	9.50	13.10	9.33	8.82	8.12	10.30	8.35	8.43	5.14
16-18	9.38	12.88	9.35	8.93	8.56	10.25	8.34	8.48	5.25
23-26	9.15	12.65	9.31	9.04	8.70	10.64	8.36	8.55	5.39
30-31	9.33	12.44	.....	.....	.....	.....	.....	8.63	.....
1936									
Jan. 2-6	9.49	12.33	9.44	9.74	10.25	10.82	8.67	8.63	9.75
13-15	9.62	12.99	11.95	10.87	18.48	10.81	.....	9.01	9.51
20-22	9.37	12.00	12.47	11.13	19.05	10.82	.....	9.31	9.71
27-29	9.15	11.85	12.67	11.34	18.26	10.75	8.99	8.76	9.10
Feb. 3-5	9.20	11.61	11.11	11.40	18.16	10.77	8.92	9.16	8.43
10-13	.....	11.48	.....	11.37	17.88	10.74	.....	9.48	.....
17-19	.....	11.71	10.37	11.38	17.37	10.72	.....	9.56	8.03
24-25	.....	13.21	10.49	11.75	18.78	10.83	.....	9.70	9.39
Mar. 2-5	10.39	26.42	13.92	13.77	19.78	11.01	10.95	10.19	10.07
9-11	11.98	37.31	13.82	13.97	19.28	10.95	11.53	12.62	10.02
16-18	12.90	38.54	13.36	13.83	18.79	10.78	11.56	12.76	9.98
23-25	13.53	38.70	12.25	13.52	18.24	10.73	11.34	13.42	9.93
30-Apr. 1	14.54	38.82	11.84	13.77	.....	10.80	11.62	12.53	9.97
Apr. 6-8	14.15	38.73	11.89	13.77	.....	10.83	11.11	12.31	9.93
13-15	14.38	38.82	11.18	13.30	.....	10.79	10.85	12.08	9.88
20-22	14.65	38.78	10.88	12.78	.....	10.85	10.60	11.78	9.38
27-29	14.76	38.93	10.58	12.50	.....	10.98	10.44	11.57	9.62
May 4-5	14.96	39.04	10.45	12.49	.....	10.90	10.32	11.50	9.90
11-13	14.98	39.05	10.33	12.02	.....	10.79	10.16	11.25	9.08
18-20	14.94	39.01	10.20	11.62	.....	10.72	10.01	10.95	8.30
25-27	14.72	38.83	10.02	11.25	.....	10.60	9.88	10.60	7.81

Water levels in wells in the South Fork area of the Palouse River

in Washington and Idaho--Continued

Date	12	14	17	18	20	20a	21	23	24
1936									
June 1-3	13.54	38.66	9.98	11.12	.....	10.73	9.75	10.26	7.38
8-10	14.23	38.47	9.94	11.12	.....	10.79	9.59	10.08	7.39
15-17	13.80	38.24	9.87	10.68	.....	10.72	9.46	9.86	7.33
22-24	13.40	37.78	9.78	11.17	.....	10.64	9.30	9.59	7.08
29-July 1	13.02	37.03	9.78	9.64	.....	.....	9.03	9.31	6.80
July 6-8	12.72	35.92	8.42	9.30	.....	10.62	8.97	.....	6.54
13-15	12.42	33.40	8.20	8.81	5.97	10.35	8.82	8.92	6.32
Aug. 3-6	11.52	18.11	8.65	7.10	4.00	9.72	.....	7.47	5.66
Sept. 1-2	10.53	11.08	8.86	6.27	3.03	7.78	8.23	6.20	5.07
8-9	10.31	10.68	8.87	6.19	2.68	7.70	8.21	6.10	4.97
14-16	10.15	10.57	8.88	6.12	2.45	7.77	8.18	6.29	4.89
21-23	9.88	10.33	.....	5.97	2.29	7.69	8.15	6.13	4.91
28-30	9.56	10.20	8.86	5.87	2.17	7.65	8.11	6.05	4.81
Oct. 5-7	9.54	10.18	8.83	5.74	3.05	7.55	8.09	6.14	4.73
12-14	9.35	10.04	8.88	5.88	2.13	7.61	8.09	6.18	4.77
19-21	9.27	10.00	8.95	5.99	2.37	7.63	8.10	6.48	4.86
26-28	9.04	9.94	8.97	6.10	2.60	8.10	8.10	6.70	4.91
Nov. 2-4	8.99	9.95	8.98	6.35	2.93	8.20	.....	6.89	4.98
9-11	8.74	9.79	8.98	6.53	3.33	8.46	.....	7.05	5.04
16-18	8.62	9.74	9.00	6.59	3.70	8.49	.....	7.16	5.09
23-25	8.48	9.66	9.04	5.75	.....	7.72	.....	7.18	5.16
30-Dec. 2	8.33	9.61	8.97	6.82	.....	7.70	.....	7.30	5.27
Dec. 7-9	8.27	9.76	9.30	6.94	.....	8.70	.....	7.40	5.42
14-16	8.31	9.66	9.05	7.00	.....	8.75	.....	7.47	5.50
21-23	8.26	9.65	9.07	7.08	.....	8.78	.....	7.56	5.63
28-30	8.12	9.74	9.02	7.20	.....	8.85	.....	7.66	5.70

Date	26	27	28	30	31	32	35	36	37
1934									
Nov. 5-7	9.60	.....	9.61	.....	6.21	.....	8.46	9.65	.....
12-14	9.50	.....	9.44	.....	6.31	.....	8.50	9.56	.....
19-21	9.91	.....	9.83	.....	6.43	.....	8.75	9.56	.....
26-28	9.35	.....	9.37	.....	6.48	.....	8.72	9.54	.....
Dec. 3-6	9.20	.....	9.20	.....	6.62	.....	8.90	9.74	.....
10-12	9.20	.....	9.31	.....	6.79	.....	9.02	9.59	.....
17-19	9.27	.....	9.40	.....	6.91	.....	9.21	9.58	.....
24-26	9.70	.....	9.85	.....	9.58	.....	9.78	9.68	.....
1935									
Jan. 1-4	10.00	9.99	10.25	9.93	10.20	9.94	10.05	10.04	.....
7-9	10.65	10.26	10.47	13.98	10.64	9.92	10.35	10.50	10.06
14-16	.....	11.10	11.00	13.25	11.14	10.85	11.79	10.70	11.87
21-25	14.22	11.02	11.17	14.15	11.43	.....	11.30	12.92	12.28
28-31	23.29	12.52	13.50	14.90	10.86	12.10	11.39	12.37	14.06
Feb. 4-6	22.37	12.49	12.71	14.21	10.73	13.13	10.49	11.61	14.62
11-13	20.15	12.31	12.35	13.22	10.52	13.80	11.52	11.49	14.88
18-20	19.79	12.03	12.77	12.20	10.65	13.35	11.62	10.98	15.40
25-27	18.93	12.29	13.89	14.15	10.58	14.05	11.77	10.89	15.93
Mar. 4-6	18.45	12.52	14.60	13.80	10.70	14.70	12.27	10.54	16.03
11-14	17.30	12.97	13.46	13.87	10.84	15.28	11.95	10.48	16.01
18-20	17.03	12.42	15.06	15.45	10.75	14.93	12.15	10.56	16.34
25-27	17.23	12.38	15.20	14.47	11.14	.....	12.33	10.55	16.37
Apr. 1-3	20.40	13.35	17.90	14.71	10.74	15.83	12.83	11.18	16.69
8-10	23.40	13.70	20.61	14.99	11.04	17.21	13.79	11.16	16.66
15-19	23.68	13.94	17.76	14.81	10.97	17.40	13.11	10.71	16.55
22-24	22.60	13.94	19.11	14.80	10.87	17.68	13.45	10.80	16.97
29-May 1	21.40	13.65	18.07	13.99	10.79	17.14	13.95	10.57	16.85
May 6-8	19.94	13.24	17.18	12.13	10.52	17.75	13.93	10.53	16.21
13-15	18.65	12.83	16.15	10.82	10.29	17.35	13.82	9.51	15.87
20-22	16.97	12.44	15.28	10.03	10.06	16.77	13.72	9.40	15.60
27-29	15.68	12.22	14.90	9.80	9.86	16.60	13.50	9.40	15.33
June 3-5	14.60	11.87	13.99	9.13	9.59	15.88	13.28	9.36	14.89
10-12	14.10	11.66	13.61	8.68	9.31	15.72	12.55	9.34	14.63
17-19	13.45	11.33	13.22	8.30	9.11	15.19	12.25	9.34	14.40
24-26	13.03	10.93	12.77	7.57	8.70	14.69	11.34	9.34	13.97

Water levels in wells in the South Fork area of the Palouse River
in Washington and Idaho--Continued

Date	26	27	28	30	31	32	35	36	37
1935									
July 1-5	12.74	10.93	12.56	7.24	8.49	14.47	10.68	9.33	.....
8-11	12.48	10.40	11.98	6.50	7.99	14.69	9.75	9.28	.....
15-17	12.28	10.31	11.87	4.53	7.94	13.89	8.90	9.32	.....
22-24	12.19	9.92	11.62	5.40	7.35	13.58	8.27	....	.....
29-31	11.95	9.42	11.20	4.96	6.95	13.04	7.99	9.26	.....
Aug. 5-7	11.78	8.76	10.97	4.44	6.57	12.75	7.86	9.28	11.43
12-14	.....	8.51	10.61	4.16	6.50	12.55	7.68	9.22	11.07
19-21	11.67	8.25	10.48	3.96	6.15	12.46	7.67	9.15	10.58
26-28	11.45	8.30	10.35	3.55	5.97	12.16	7.57	9.09	10.20
Sept. 2-4	11.45	8.08	10.32	3.08	5.82	12.07	7.43	9.29	9.75
9-11	11.31	7.25	10.11	2.94	5.45	11.87	7.33	9.22	9.48
16-18	11.19	7.27	9.99	2.67	5.54	11.50	7.37	9.29	9.15
23-25	11.01	7.12	9.90	2.38	5.26	11.52	7.32	9.41	8.92
30-Oct. 2	11.01	6.99	9.72	2.09	5.19	11.28	7.39	9.32	8.73
Oct. 7-9	10.92	6.89	9.47	1.98	5.14	11.13	7.31	9.58	8.60
14-16	10.79	6.85	9.88	1.70	5.20	11.48	7.57	9.38	8.62
21-23	10.44	6.76	9.39	1.51	5.18	10.58	7.83	9.47	8.58
28-30	10.82	6.83	9.89	1.36	5.28	11.40	8.15	9.49	8.68
Nov. 4-6	10.62	6.77	9.32	1.20	5.31	10.59	8.09	9.41	8.58
11-13	10.52	6.86	9.52	1.02	.....	10.55	8.13	9.28	8.62
18-20	10.39	6.97	9.45	.98	5.42	10.50	8.34	9.30	8.78
25-27	10.24	6.88	9.15	.96	5.50	9.39	8.48	9.35	8.72
Dec. 2-4	10.38	6.92	9.18	.75	5.59	10.33	8.52	9.35	8.93
9-11	10.51	6.94	9.17	.67	5.76	10.24	8.66	9.40	9.26
16-18	10.17	6.97	8.92	.60	5.82	10.00	8.70	9.35	9.11
23-26	10.35	7.03	9.11	.52	5.93	10.14	8.72	9.34	9.33
30-31	.....	7.08	9.20	.48	6.05	10.19	.....	.....	9.51
1936									
Jan. 2-7	10.67	7.41	9.10	.96	6.40	9.97	10.21	9.87	9.98
13-15	12.35	9.30	9.27	10.82	10.05	10.07	11.14	10.71	11.02
20-22	13.65	9.68	9.10	9.93	8.37	9.93	11.06	10.54	11.96
27-29	13.94	10.07	9.27	8.96	8.58	10.02	11.18	11.13	12.57
Feb. 3-5	14.24	9.76	9.44	8.08	8.02	9.99	11.19	10.17	12.90
10-13	.....	9.36	9.21	7.28	8.03	9.90	11.18	10.04	13.10
17-19	13.05	9.10	9.18	6.86	8.05	9.70	11.15	9.95	13.07
24-26	14.16	9.99	9.48	6.93	9.62	9.88	11.75	10.52	13.57
Mar. 2-5	23.44	11.91	10.02	8.73	11.26	9.99	12.55	12.40	15.01
9-10	23.43	12.66	10.79	12.18	10.72	10.98	12.94	11.96	15.59
16-18	22.74	12.89	11.69	14.27	10.64	12.44	13.36	11.73	16.25
23-25	21.06	12.88	12.45	13.36	10.49	13.35	13.39	11.05	16.23
30-Apr. 1	19.14	12.97	12.62	14.35	10.65	13.59	13.77	11.35	16.54
Apr. 6-8	19.32	12.89	12.59	13.88	10.45	13.45	13.88	10.17	16.44
13-15	18.54	12.78	12.95	13.13	10.40	14.04	13.87	10.21	16.32
20-22	17.45	12.54	12.63	10.72	10.01	13.72	13.69	9.81	15.14
27-29	16.04	12.38	12.43	9.64	10.25	13.63	13.61	9.49	15.79
May 4-6	15.24	12.22	11.22	9.33	10.18	13.24	13.69	9.39	15.79
11-13	14.20	12.48	11.91	9.35	9.82	12.89	13.66	9.32	15.56
18-20	13.57	11.77	.....	8.93	9.48	12.74	13.40	9.32	15.44
25-27	13.43	11.41	11.49	8.47	9.25	12.36	13.00	9.24	15.20
June 1-3	12.84	11.07	11.47	8.30	9.09	12.23	12.50	9.35	14.84
8-10	12.44	10.81	11.24	8.18	8.81	11.79	12.15	9.33	14.73
15-17	12.25	10.56	11.05	7.33	8.85	11.75	10.49	9.33	14.68
22-24	12.02	10.18	10.76	6.88	8.53	11.55	9.72	9.31	14.46
29-July 1	11.91	9.52	10.61	6.50	8.19	11.29	9.62	9.33	14.16
July 6-8	11.88	8.98	10.38	6.17	7.83	11.14	9.03	9.31	13.81
13-15	11.64	8.55	9.80	5.76	7.54	10.96	8.43	9.30	.....
Aug. 3-6	11.22	7.72	9.55	4.00	6.23	10.49	7.51	9.30	11.85
31-Sept. 2	11.25	.....	9.11	3.30	5.18	.....	7.29	9.40	.....
Sept. 8-9	11.01	.....	.....	3.04	5.12	10.00	7.24	9.41	10.51
14-16	10.69	6.70	9.02	2.88	5.06	9.92	7.23	9.39	10.18
21-23	10.67	6.56	8.98	2.59	4.99	9.98	7.17	9.41	9.96
28-30	10.86	6.49	8.70	2.32	4.88	9.79	7.09	9.45	9.82
Oct. 5-7	10.63	6.41	8.62	2.11	4.81	9.60	7.09	9.46	9.70
12-14	10.70	6.32	8.63	1.88	4.82	9.67	7.11	9.50	9.63
19-21	10.52	6.25	8.64	1.68	4.85	9.81	7.30	9.57	9.60
26-28	10.44	6.18	8.49	1.47	4.86	9.55	7.55	9.56	9.56

Water levels in wells in the South Fork area of the Palouse River
in Washington and Idaho--Continued

Date	26	27	28	30	31	32	35	36	37
1936									
Nov. 2-4	10.39	5.58	8.43	1.31	4.92	9.25	7.70	9.50	9.67
9-11	10.36	5.67	8.41	1.11	4.94	9.51	7.83	9.46	9.72
16-18	10.28	5.80	8.40	.96	4.96	9.35	7.90	9.46	9.70
23-25	10.08	5.71	8.27	.83	4.98	9.17	7.81	9.49	9.75
30-Dec. 2	10.03	5.57	8.21	.72	5.09	9.12	7.77	9.50	9.84
Dec. 7-9	10.20	5.60	8.45	.67	5.22	9.21	8.11	9.56	9.97
14-16	10.38	5.79	8.31	.56	5.15	9.23	8.24	9.81	10.05
21-23	10.39	6.03	8.27	.47	5.25	9.12	8.32	9.89	10.17
28-30	10.47	6.10	8.29	.43	5.38	9.03	8.37	9.88	10.58

Date	38	39	40	41	42	43	44
1936							
Apr. 1	.....	13.76	.....	13.76	13.76	.....	.....
6-8	13.59	14.11	13.59	13.67	13.66	13.59	13.59
13-15	13.63	14.45	13.50	13.91	13.91	13.06	13.60
20-22	13.25	14.71	13.67	13.82	13.87	12.87	13.57
27-29	12.79	14.92	13.69	14.09	14.15	12.60	13.64
May 4-6	12.15	15.09	13.65	13.74	13.79	12.46	13.67
11-13	11.88	15.13	13.38	14.16	14.30	12.25	13.59
18-20	11.37	15.07	13.05	14.18	14.20	12.13	13.58
25-27	11.20	14.97	12.53	14.61	14.60	11.91	13.54
June 1-3	10.12	14.82	12.20	14.14	14.23	11.78	13.65
15-17	9.74	14.31	11.47	14.20	14.19	11.45	13.56
22-24	9.37	14.02	9.82	14.18	14.17	11.16	.....
29-July 1	8.68	.....	10.14	14.40	14.16	11.03	13.48
July 6-8	8.35	13.36	8.79	14.27	14.25	10.89	13.44
13-15	7.94	13.00	8.08	14.12	14.16	10.81	13.45
Aug. 3-5	6.65	.....	4.94	14.05	14.07	10.46	13.40
Sept. 1-2	5.75	11.43	.74	14.25	14.31	10.32	13.43
8-9	5.69	11.37	-.26	13.95	14.00	10.38	13.44
14-16	5.56	11.15	-1.17	13.62	13.67	10.45	13.50
21-23	5.41	11.07	-1.84	13.68	13.75	10.29	13.44
28-30	5.24	11.06	-2.38	13.92	13.99	10.27	13.39
Oct. 5-7	5.00	11.07	-2.89	13.97	14.03	10.28	13.42
12-14	4.96	10.93	-3.29	13.75	13.78	10.27	13.40
19-21	4.99	10.90	-3.72	13.53	13.60	10.34	13.39
26-29	5.07	10.88	-4.03	13.52	13.58	10.38	13.40
Nov. 2-4	5.19	10.87	-4.27	13.48	13.56	10.45	13.41
9-11	5.31	10.85	-4.46	13.47	13.55	10.50	13.39
16-18	5.34	10.84	-4.63	13.45	13.52	10.45	13.37
23-25	5.56	10.83	-4.84	13.26	13.30	10.44	13.39
30-Dec. 2	5.50	10.82	-5.17	13.74	13.81	10.48	13.48
Dec. 7-9	5.80	10.88	-5.22	13.33	13.39	10.53	13.60
14-16	5.97	10.88	-5.37	13.57	13.67	10.46	13.53
21-23	6.26	10.89	-5.49	13.66	13.75	10.50	13.44
28-30	6.23	10.91	-5.58	13.71	13.79	10.52	13.39

Date	46	47	48	49	51	53	54
1936							
May 11-13	.....	12.50	.....	.....	.....	.....	.....
18-20	.....	12.17	.....	.....	.....	.....	.....
25-27	.....	11.87	11.98	11.98	11.98	.....	.....
June 1-3	11.75	11.61	11.93	11.63	11.67	.....	.....
15-17	11.33	11.33	11.89	11.29	11.15	11.38	8.47
22-24	11.22	11.16	11.83	11.00	10.17	11.72	8.27
29-July 1	11.01	10.96	11.81	10.71	10.41	11.71	7.99
6-8	10.78	10.77	11.74	10.59	10.30	11.72	7.84
13-15	10.64	10.54	11.71	10.21	10.30	11.70	7.67
Aug. 3-6	9.16	10.38	11.58	9.06	.....	11.53	7.16
Sept. 1-2	9.96	9.90	11.33	8.41	11.31	.....	6.82

Water levels in wells in the South Fork area of the Palouse River
in Washington and Idaho--Continued

Date	46	47	48	49	51	53	54
1936							
Sept. 8-9	9.86	9.83	11.31	8.24	11.15	11.41	6.72
14-16	.....	9.55	11.25	8.18	.....	11.44	6.72
21-23	9.84	9.18	11.25	8.00	11.03	11.29	6.65
28-30	9.72	9.33	11.21	7.76	11.03	11.21	6.60
Oct. 5-7	9.61	9.24	11.13	7.63	11.03	11.28	6.54
12-14	9.28	9.21	11.08	7.53	10.98	11.18	6.53
19-21	8.91	9.21	11.06	7.51	10.90	11.20	6.44
26-29	8.84	9.19	10.99	....	10.92	11.13	6.52
Nov. 2-4	9.22	9.23	10.96	7.23	10.90	11.10	6.56
9-11	9.66	9.25	10.92	7.18	10.88	11.03	6.47
16-18	9.82	9.28	.....	7.16	.....	11.05	6.48
23-25	9.68	9.33	10.84	7.01	10.78	10.97	6.45
30-Dec. 2	9.76	9.40	10.85	6.94	10.74	10.95	6.49
7-9	9.92	9.49	10.78	7.08	10.69	10.83	6.59
14-16	9.93	9.51	10.77	6.96	10.76	11.08	6.54
21-23	10.09	9.65	10.78	.....	10.85	.....	6.65
28-30	10.26	9.73	10.76	6.98	10.90	11.24	6.65

Water levels in wells on the Soil Erosion Experiment Station farm at
Pullman, Wash., in feet above sea level.

Date	3N	2N	1N	1E	3E	4E	5E
1934							
Dec. 14	499.05	504.97	512.49	514.02	525.58	539.98	540.19
28	499.11	505.86	512.77	514.32	534.37	540.64	540.78
1935							
Jan. 15	499.08	507.23	513.07	515.15	535.90	541.44	541.40
25	499.01	508.49	513.03	515.25	535.35	541.30	541.30
Feb. 5	499.26	507.68	514.48	515.80	535.47	542.65	542.96
12	499.46	507.39	515.69	517.44	533.65	543.08	543.70
19	499.47	507.62	515.52	516.98	531.37	542.58	542.98
26	499.62	507.72	515.72	517.00	530.78	542.68	543.46
Mar. 6	499.74	507.55	516.12	517.25	530.46	542.89	543.62
13	499.74	507.89	516.03	517.10	529.72	542.59	543.05
19	498.86	507.82	516.42	517.44	530.23	543.05	544.01
28	499.84	507.94	516.99	517.01	529.68	542.55	543.26
Apr. 2	500.05	508.30	516.33	517.19	532.37	542.96	545.00
9	500.32	508.75	516.57	517.32	532.30	543.38	546.86
16	500.61	508.35	517.02	517.78	532.25	543.65	550.17
24	500.82	508.06	516.81	517.65	531.76	543.50	549.35
30	501.19	507.75	517.25	518.27	531.07	544.14	547.91
May 7	501.16	507.37	516.57	517.79	529.75	543.58	544.70
14	501.18	507.20	516.37	517.75	529.02	543.58	544.50
21	501.03	507.18	516.89	517.30	528.43	543.49	544.01
28	501.98	507.10	515.72	517.20	528.13	543.28	543.93
June 4	500.79	506.88	515.22	516.72	527.74	542.83	543.54
11	500.72	506.72	515.18	516.71	527.54	542.93	543.54
18	500.57	505.49	514.89	516.41	527.30	542.76	543.33
25	500.50	506.18	514.57	516.09	527.00	542.45	543.04
Dec. 3	498.54	505.09	512.48	513.86	525.65	540.43	540.44
10	498.52	505.14	512.42	513.78	525.65	540.44	540.40
17	498.45	504.99	512.33	513.69	525.44	540.12	540.19
24	498.43	505.13	512.34	513.67	525.51	540.26	540.21
31	498.43	505.24	512.37	513.61	525.52	540.31	540.18
1936							
Jan. 7	498.82	505.86	513.16	514.05	525.67	540.17	540.11
14	499.84	507.91	513.19	515.19	526.08	540.22	540.35
21	500.15	507.69	513.07	513.97	529.56	540.04	542.32
28	500.50	507.48	512.92	513.92	529.71	540.20	541.67
Feb. 4	500.86	507.19	513.01	514.20	529.13	540.50	540.24
11	501.07	506.92	513.00	514.22	527.92	540.46	540.14
18	501.06	506.59	512.66	513.91	526.71	540.12	539.87
25	501.36	506.77	512.60	513.75	526.55	540.16	539.81
Mar. 3	502.87	509.38	513.28	514.36	530.68	540.45	541.50
10	502.84	508.75	513.56	514.20	532.08	540.91	543.64
17	503.03	508.89	513.93	514.68	531.30	541.51	543.33

Water levels in wells on the Soil Erosion Experiment Station farm at
Pullman, Wash.--Continued

Date	3N	2N	1N	1E	3E	4E	5E
1936							
Mar. 25	502.95	508.15	513.76	514.74	530.02	541.52	541.60
31	502.95	508.52	513.79	514.90	529.24	541.64	541.45
Apr. 7	502.82	508.47	513.56	514.78	528.84	541.16	541.10
14	502.70	507.72	513.47	514.70	528.78	541.39	541.10
21	502.62	507.18	513.39	514.75	528.31	541.34	540.90
28	502.43	506.93	513.23	514.65	527.78	541.35	540.92
May 5	502.26	506.72	512.84	514.54	527.34	541.24	.....
12	502.09	506.63	512.92	514.42	526.75	541.00	540.56
19	501.97	506.57	512.82	514.24	526.42	541.01	540.53
26	501.87	506.56	512.81	514.29	526.39	541.05	540.52
June 2	501.74	.....	512.55	513.99	526.07	540.65	540.24
9	501.44	.....	512.32	513.78	525.73	540.26	539.96
16	501.39	506.23	512.37	513.77	525.72	540.36	539.99
23	501.26	506.30	512.35	513.70	525.66	540.33	539.95
30	501.12	506.22	512.24	513.60	525.53	540.18	539.82
July 7	501.10	506.30	512.23	513.62	525.48	540.12	539.77
14	500.85	506.32	512.11	513.44	525.33	539.96	539.66
Aug. 6	500.48	506.34	511.99	513.33	525.18	539.83	539.47
Sept. 1	500.04	506.27	511.89	513.20	525.06	539.69	539.30
8	499.93	506.14	511.77	513.10	524.84	539.41	539.14
15	499.81	506.06	511.60	512.98	524.65	539.20	538.97
22	499.75	506.03	511.74	513.04	524.75	539.33	539.03
29	499.68	505.90	511.73	512.99	524.79	539.41	539.04
Oct. 6	499.69	505.85	511.67	512.93	524.72	539.33	538.98
13	499.49	505.82	511.57	512.84	524.59	539.20	538.85
20	499.47	505.92	511.41	512.79	524.65	539.31	538.88
27	499.34	505.49	511.38	512.75	524.44	539.02	538.70
Nov. 3	499.28	505.37	511.47	512.76	524.35	538.87	538.60
10	499.27	505.51	511.53	512.76	524.33	538.92	538.63
17	499.16	505.26	511.49	512.58	524.28	538.88	538.52
24	499.10	505.13	511.36	512.57	524.22	538.78	538.45
Dec. 1	499.11	504.28	511.50	512.69	524.34	539.03	538.57
8	498.98	504.94	511.37	512.57	524.11	538.68	538.34
15	499.01	505.13	511.39	512.57	524.30	538.93	538.46
22	498.95	505.16	511.43	512.58	524.26	538.86	538.41
29-30	498.91	504.99	511.31	512.52	524.18	538.72	538.34

Date	1S	2S	3S	4S	5S	6S
1934						
Dec. 14	511.94	511.85	503.72	499.16	501.67	507.16
28	512.29	512.46	507.74	499.26	502.38	511.13
1935						
Jan. 15	512.38	512.61	508.45	.....	505.67	511.86
25	512.60	512.60	508.09	499.39	506.55	517.08
Feb. 5	514.16	513.92	507.10	499.24	506.52	517.13
12	516.12	514.61	506.88	499.19	505.84	516.71
19	514.78	514.38	504.98	499.20	505.72	515.96
26	514.99	514.61	504.64	498.95	505.95	516.29
Mar. 6	515.33	514.84	504.49	499.00	505.54	516.80
13	515.21	514.73	504.36	499.15	505.63	516.83
19	515.60	515.06	504.52	499.03	505.72	517.54
28	515.20	514.77	504.48	499.23	505.50	516.87
Apr. 2	515.47	514.96	504.94	499.21	507.22	518.86
9	515.70	515.36	505.03	499.22	507.37	519.66
16	516.17	515.68	505.29	499.18	507.02	520.15
24	515.90	515.36	505.09	499.03	506.73	519.57
30	516.47	516.02	505.05	498.56	506.13	518.81
May 7	515.82	515.41	504.28	498.06	504.94	517.05
14	515.64	515.23	504.11	497.79	503.04	515.50
21	514.17	514.74	503.93	497.63	503.69	513.16
28	515.02	514.68	503.96	497.36	503.50	512.56
June 4	514.56	514.21	503.79	497.31	503.32	511.82
11	514.52	514.19	503.84	496.61	503.22	511.41
18	514.25	513.95	503.80	496.28	503.11	511.03
25	513.93	513.75	503.71	495.79	502.78	510.55

Water levels in wells on the Soil Erosion Experiment Station farm at
Pullman, Wash.--Continued

Date	1S	2S	3S	4S	5S	6S
1935						
Dec. 3	511.90	511.56	502.18	496.13	501.14	507.07
10	511.91	511.60	502.23	496.16	501.00	507.09
17	511.76	511.41	502.11	496.21	500.79	506.93
24	511.78	511.49	502.15	496.21	500.65	506.83
31	511.78	511.48	502.22	496.54	500.56	509.62
1936						
Jan. 7	512.35	511.91	502.35	497.11	500.70	510.91
14	512.38	511.90	502.48	499.05	501.71	508.83
21	512.28	511.63	502.29	499.02	502.07	507.58
28	512.29	511.94	502.29	498.01	502.17	507.00
Feb. 4	512.35	512.01	502.38	497.67	502.13	506.95
11	512.32	512.00	502.36	497.70	502.15	506.83
18	512.03	511.64	502.21	497.64	502.11	506.76
25	511.98	511.64	502.28	498.74	502.10	507.45
Mar. 3	512.52	512.05	502.89	498.69	504.83	512.03
10	512.72	512.21	502.61	499.14	504.94	509.48
17	513.15	512.62	502.81	499.14	505.12	509.00
25	513.01	512.59	502.82	498.96	504.65	509.57
31	513.09	512.65	502.85	498.79	504.84	509.59
Apr. 7	512.87	512.34	503.13	498.99	504.63	509.60
14	512.84	512.48	503.27	498.53	504.31	509.69
21	512.76	512.39	503.21	497.99	503.82	509.72
28	512.66	512.36	503.19	498.56	503.60	509.63
May 5	512.53	512.24	503.09	498.87	503.50	509.53
12	512.35	512.08	502.90	497.85	503.35	509.26
19	512.31	512.07	502.88	497.65	503.22	509.16
26	512.29	512.07	502.86	497.37	503.09	509.14
June 2	511.82	511.73	502.65	497.21	502.93	509.17
9	511.77	511.44	502.46	497.19	503.75	508.70
16	511.74	511.52	502.54	497.40	502.73	508.55
23	511.74	511.53	502.55	497.46	502.58	508.32
30	511.68	511.44	502.50	497.42	502.42	508.16
July 7	511.66	511.36	502.51	497.37	502.25	508.03
14	511.56	511.29	502.48	497.28	502.16	507.87
Aug. 6	511.45	511.34	502.47	497.16	501.84	507.33
Sept. 1	511.34	511.13	502.53	497.03	501.52	507.01
8	511.21	510.98	502.41	497.07	501.39	506.90
15	511.08	510.78	502.31	496.96	501.28	506.87
22	511.15	510.90	502.43	496.95	501.25	506.74
29	511.18	510.97	502.47	496.92	501.21	506.69
Oct. 6	511.11	510.91	502.46	496.89	501.16	506.65
13	511.02	510.80	502.41	496.84	500.93	506.59
20	511.09	510.88	502.48	497.18	501.86	506.61
27	510.93	510.69	502.34	496.68	501.67	.....
Nov. 3	510.89	510.58	502.27	496.59	501.56	.....
10	510.99	510.78	502.42	496.57	501.52	.....
17	510.90	510.62	502.30	497.53	500.39	.....
24	510.80	510.55	502.23	496.51	500.32	.....
Dec. 1	510.96	510.78	502.44	496.56	500.33	.....
8	510.73	510.44	502.22	496.70	500.21	.....
15	510.86	510.68	502.41	496.81	500.21	.....
22	510.84	510.61	502.41	497.26	500.16	.....
29-30	510.75	510.54	502.35	497.25	500.12	.....

WISCONSIN

CENTRAL AND NORTHEASTERN WISCONSIN

By G. T. Owen

The Wisconsin Conservation Department has conducted a systematic survey of the shallow ground-water resources of its forest protection districts in central and northern Wisconsin since June 1935. The investigation includes the jetting down of 4-inch test wells to depths of 10 to 25 feet and the pumping of some of these wells to ascertain their yields. The Federal Government has cooperated in the project through the Emergency Conservation Work program.

In 1935 about 1,800 temporary test wells were sunk by the survey crews and depths to water level and yields were obtained on about 1,000 of these wells. In 1936 about 2,500 temporary test wells were sunk, and depths to water level and yields were obtained on about 1,800. The records of these tests are being filed in map and report form at Forest Protection Headquarters, Tomahawk, Wis. It is not expected that these records will be published.

Four observation wells were installed in 1935 in the central and northeastern parts of the State in connection with this survey. These wells are in Adams County, in central Wisconsin, and in Oneida, Langlade, and Marinette Counties in northeastern Wisconsin. The wells are numbered to correspond with the numbers of the forest protection districts in which they are located. The Wisconsin Geological Survey and the United States Geological Survey have cooperated informally in this part of the program.

These four observation wells are 8 inches in diameter and are cased with No. 14 galvanized sheet-iron well pipe. Each well is equipped with a float-tape gage and a shelter house. The wells range from 14 to 24 feet in depth, and they obtain their water from glacial drift. All four wells reflect water-table conditions. None is in a recognized cone of depression resulting from the pumping of nearby wells.

During 1936 daily gage readings were taken on two of these wells, and two readings a week were taken on a third well. Daily gage readings were made on the fourth well in the period July through December. The readings are made by local observers.

No automatic water-stage recorders have been used thus far, and no instrumental leveling has been done. Measuring points are the pointers on the float-tape gages. The height of the pointer above land surface and above the top of the casing has been measured at each well to insure a reasonable degree of permanence in the altitude of the measuring point. The gages are mounted on leveling tables in such a manner that quick adjustment to a constant height of the measuring point above the top of the casing can be made.

Records of the individual measurements of water level in the observation wells are on file with the division of ground water, United States Geological Survey, and with the Wisconsin Geological Survey. Monthly average water levels to the nearest 0.1 foot in each of three wells and daily water levels in the fourth well in 1936 are given in the following tabulation.

Well 4, Langlade County

Well 4 is in the SW $\frac{1}{4}$ sec. 20, T. 31 N., R. 11 E., at the Antigo ranger station. The measuring point is the pointer on the float-tape gage, 4.44 feet above land surface. The depths to water level have been converted to heights above an arbitrary datum, 10 feet below the water level on December 10, 1935. On that date the depth to water below the measuring point was 20.11 feet.

Monthly average water levels in Well 4 and the precipitation at the Antigo ranger station

Month	Water level (feet)	Precipitation (inches)	Month	Water level (feet)	Precipitation (inches)
Dec. 1935	10.10	....	July 1936	11.00	2.27
Jan. 1936	No readings	a0.68	Aug.	10.60	5.94
Feb.	9.70	a1.56	Sept.	10.60	3.19
Mar.	9.70	a1.28	Oct.	10.40	2.71
Apr.	11.20	1.57	Nov.	10.20	.56
May	12.00	4.83	Dec.	9.90	1.35
June	11.40	.77			

a/ Snow.

Precipitation records are obtained from a rain gage 50 feet from the well. Snow was melted to give the equivalent amount of rain. The mean annual precipitation in Wisconsin is about 31 inches. Precipitation at this gaging station in 1936 was therefore about 4 inches less than the mean annual precipitation for the State.

The measurements indicate that the average stage of the water level in the well was 0.20 foot lower in December 1936 than in December 1935. The relatively small depletion of ground water in this subnormal period of precipitation is explained by the following facts: Very heavy snows

of precipitation is explained by the following facts: Very heavy snows fell during the winter; run-off in the spring of 1936 was relatively small, and a considerable recharge of ground water took place; and the deficiency in precipitation occurred chiefly in the summer, when practically all the rainfall is utilized by vegetation.

Well 5, Marinette County

Well 5 is in the SW $\frac{1}{4}$ sec. 22, T. 34 N., R. 18 E. The measuring point is the pointer on the float-tape gage, 4.57 feet above the land surface. The depths to water level have been converted to heights above an arbitrary datum, 10 feet below the water level on October 27, 1935. On that date the depth to water level below the measuring point was 17.02 feet.

Monthly average water levels in well 5
and precipitation recorded at a nearby station

Month	Water level (feet)	Precipi- tation (inches)	Month	Water level (feet)	Precipi- tation (inches)
Oct. 1935	10.00	....	June 1936	10.90	1.97
Nov.	9.95	....	July	10.40	.74
Dec.	9.95	....	Aug.	9.70	6.22
Jan. 1936	9.70	a 1.19	Sept.	9.50	.87
Feb.	9.60	a 1.66	Oct.	9.40	3.10
Mar.	9.70	a 1.66	Nov.	9.40	.82
Apr.	10.50	1.98	Dec.	9.35	2.07
May	11.00	2.95			

a/ Snow.

Precipitation records are obtained from a rain gage about 15 miles from the observation well. Snow was melted to give the equivalent amount of rain. In 1936 precipitation in this area was about 6 inches below the mean annual precipitation for the State.

The measurements indicate that the average stage of the water level was 0.60 foot lower in December 1936 than in December 1935. Heavy snows during the winter, relatively small run-off in the spring, and recharge of relatively high magnitude in April and May 1936 explain the fact that depletion of ground water was not greater during the period of subnormal precipitation.

Well 9, Adams County

Daily water levels in this well from September 12 to December 25, 1935 are given in Water-Supply Paper 777. Water levels are expressed in feet above an arbitrary datum, 10 feet below the water level on September 12, 1935. The measuring point and the arbitrary datum were not changed in 1936.

Daily water levels in observation well 9 and daily precipitation
at Friendship, Adams County, Wis.

Date	Water level (feet)	Precipitation (inches)	Date	Water level (feet)	Precipitation (inches)	Date	Water level (feet)	Precipitation (inches)
1936			1936			1936		
Jan. 2	8.97	a0.04	Mar. 8	8.11	....	May 13	9.56	.10
3	9.01	a .06	9	8.13	....	14	9.37	....
4	8.97	a .04	10	8.10	....	15	9.51	....
5	8.83	a .11	11	8.11	.29	16	9.54	....
6	8.74	....	12	8.70	....	17	9.52	.29
7	7.75	Tr.	13	8.68	....	18	9.51	Tr.
8	8.76	....	14	8.75	.32	19	9.35	....
9	8.87	....	15	8.75	....	20	9.24	Tr.
10	8.78	....	16	8.83	....	21	9.27	....
11	8.77	....	17	8.89	....	22	9.14	....
12	8.77	....	18	8.94	....	23	9.09	.01
13	8.77	a .00	19	9.15	....	24	8.97	Tr.
14	8.30	....	20	9.23	....	25	8.90	....
15	7.77	....	21	9.38	....	26	8.93	....
16	8.67	....	22	9.77	....	27	8.86	....
17	8.62	....	23	9.78	.20	28	8.80	....
18	8.59	a .27	24	9.94	....	29	8.74	....
19	8.57	....	25	9.87	....	30	8.88	....
20	8.59	a .04	26	10.01	.02	31	8.88	....
21	8.59	a .15	27	10.19	.10	June 1	9.00	.65
22	8.59	....	28	9.97	....	2	9.05	.54
23	8.59	....	29	9.94	....	3	8.83	....
24	8.59	....	30	9.79	.10	4	8.77	....
25	8.59	....	31	9.87	Tr.	5	8.77	....
26	8.61	....	Apr. 1	9.95	....	6	8.85	.12
27	8.61	....	2	10.06	.09	7	8.79	.04
28	8.61	....	3	9.99	Tr.	8	8.71	....
29	8.58	a .10	4	9.97	....	9	8.73	.14
30	8.54	....	5	10.03	.14	10	8.65	Tr.
31	8.60	....	6	9.98	....	11	8.59	....
Feb. 1	8.43	....	7	10.00	....	12	8.55	....
2	8.49	....	8	9.94	....	13	8.49	....
3	8.51	a .05	9	9.99	....	14	8.48	.14
4	8.49	a .31	10	10.23	Tr.	15	8.54	....
5	8.47	....	11	10.05	.22	16	8.56	....
6	8.44	....	12	10.02	....	17	8.63	.65
7	8.44	....	13	9.99	....	18	8.51	.05
8	8.46	a .08	14	10.07	.02	19	8.43	....
9	8.46	....	15	10.02	.02	20	8.41	....
10	8.39	a .15	16	9.87	.08	21	8.38	....
11	8.36	....	17	9.83	....	22	8.38	....
12	8.33	....	18	9.83	....	23	8.36	....
13	8.33	a .05	19	9.81	....	24	8.36	....
14	8.33	....	20	9.99	....	25	8.32	....
15	8.30	....	21	9.69	.06	26	8.33	.17
16	8.28	a .02	22	9.61	....	27	8.20	....
17	8.28	....	23	9.62	....	28	8.18	....
18	8.28	....	24	9.64	....	29	8.13	.07
19	8.30	....	25	9.80	.13	30	8.13	....
20	8.30	a .04	26	9.65	....	July 1	7.99	....
21	8.30	....	27	9.70	....	2	7.91	....
22	8.28	....	28	9.65	.03	3	7.85	.05
23	8.27	....	29	9.67	.08	4	7.88	.09
24	8.27	....	30	9.56	....	5	7.87	....
25	8.09	....	May 1	9.71	.66	6	7.79	....
26	8.07	....	2	9.73	....	7	7.78	....
27	8.07	.83	3	9.67	....	8	7.72	....
28	8.05	....	4	9.66	Tr.	9	7.72	....
29	8.05	.02	5	9.73	.26	10	7.67	....
Mar. 1	8.03	....	6	9.85	.25	11	7.64	....
2	8.08	....	7	9.81	....	12	7.60	....
3	8.08	....	8	9.71	....	13	7.56	....
4	8.07	....	9	9.62	....	14	7.58	....
5	8.10	....	10	9.60	.09	15	7.54	....
6	8.08	....	11	9.60	.23	16	7.43	....
7	8.08	....	12	9.63	....	17	7.43	....

a Snow.

Daily water levels in observation well 9 and daily precipitation
at Friendship, Adams County, Wis.--Continued

Date	Water level (feet)	Precipitation (inches)	Date	Water level (feet)	Precipitation (inches)	Date	Water level (feet)	Precipitation (inches)
1936			1936			1936		
July 18	7.43	....	Sept. 12	7.05	0.11	Nov. 7	6.86	....
19	7.44	0.09	13	7.00	Tr.	8	6.95	0.14
20	7.42	....	14	7.06	.07	9	7.06	....
21	7.34	....	15	7.07	.27	10	6.87	....
22	7.33	.07	16	6.94	1.26	11	6.96	....
23	7.48	1.7	17	7.03	....	12	6.94	....
24	7.42	....	18	7.12	....	13	6.93	....
25	7.47	....	19	7.13	....	14	6.99	Tr.
26	7.44	....	20	7.24	.34	15	6.82	....
27	7.43	....	21	7.22	....	16	6.82	....
28	7.40	....	22	7.28	....	17	6.73	....
29	7.25	....	23	7.23	....	18	6.68	....
30	7.29	....	24	7.10	....	19	6.82	....
31	7.30	....	25	7.13	....	20	6.96	....
Aug. 1	7.25	....	26	7.13	....	21	6.77	....
2	7.27	....	27	7.08	.32	22	6.81	....
3	7.27	....	28	7.02	....	23	6.82	....
4	7.18	....	29	7.03	....	24	6.83	....
5	7.17	....	30	7.02	....	25	6.71	Tr.
6	7.17	....	Oct. 1	7.00	....	26	6.72	Tr.
7	7.19	....	2	6.92	....	27	6.66	Tr.
8	7.17	....	3	6.91	....	28	6.77	....
9	7.17	....	4	6.95	.70	29	6.73	....
10	7.21	1.06	5	6.97	.08	30	6.65	....
11	7.18	....	6	6.92	....	Dec. 1	6.62	....
12	7.22	....	7	6.83	.07	2	6.68	a .05
13	7.21	....	8	6.84	....	3	6.67	a .05
14	7.21	....	9	6.87	.08	4	6.54	a .07
15	7.21	....	10	6.77	....	5	6.47	....
16	7.15	.01	11	6.77	....	6	6.67	a .39
17	7.12	....	12	6.70	....	7	6.45	....
18	7.23	....	13	6.70	....	8	6.79	....
19	7.19	.16	14	6.70	....	9	7.51	....
20	7.15	....	15	6.76	Tr.	10	6.83	....
21	7.22	1.30	16	6.78	.02	11	6.49	....
22	7.22	.11	17	6.78	.09	12	6.52	....
23	7.23	.12	18	6.82	.02	13	6.52	....
24	7.16	....	19	6.79	....	14	6.51	....
25	7.11	.40	20	6.71	....	15	6.47	....
26	7.17	....	21	6.74	.85	16	6.51	....
27	7.09	.08	22	6.65	....	17	6.46	....
28	7.24	.74	23	6.65	....	18	6.43	....
29	7.22	....	24	6.77	....	19	6.39	....
30	7.11	....	25	6.86	....	20	6.38	....
31	7.12	....	26	6.72	....	21	6.36	....
Sept. 1	7.18	....	27	6.76	....	22	6.32	....
2	7.17	....	28	6.87	....	23	6.33	....
3	7.08	....	29	6.91	....	24	6.34	....
4	7.02	....	30	6.69	....	25	6.28	....
5	7.07	....	31	6.85	1.05	26	6.26	.25
6	7.05	.03	Nov. 1	6.80	.35	27	6.24	....
7	7.12	.34	2	6.90	.50	28	6.22	....
8	7.12	....	3	6.83	.14	29	6.34	Tr.
9	7.12	....	4	6.72	....	30	6.44	Tr.
10	7.10	....	5	6.80	....	31	6.52	....
11	7.09	.05	6	6.85	....		

a Snow.

Precipitation records are obtained from a rain gage 30 feet from the observation well. Precipitation at this station during 1936 was about 9 inches below the mean annual precipitation for the state.

The measurements indicate that the average stage of the water level was about 2.80 feet lower in December 1936 than in December 1935. The soils in this locality consist of glacial-lake clays and glacial and alluvial sands. There is some evidence that the underlying clays form a small basin at this site which may explain the marked decline in the water level in the well, inasmuch as the effect of subnormal precipitation would be quickly reflected on the water level.

Well 8, Oneida County

Well 8 is in the SW $\frac{1}{4}$ sec. 26, T. 38 N., R. 7 E. The measuring point is the pointer on the float-tape gage, 4.0 feet above the land surface. The depths to water level have been converted to heights above an arbitrary datum, 10 feet below the water level on July 2, 1936. On that date the depth to water level was 4.90 feet below the measuring point.

Monthly average water levels in well 8
and the precipitation recorded at a nearby station

Month	Water level (feet)	Precipitation (inches)	Month	Water level (feet)	Precipitation (inches)
July 1936	9.60	1.28	Oct. 1936	9.90	1.96
Aug.	9.62	6.33	Nov.	9.86	....
Sept.	9.92	2.80	Dec.	9.94	....

The Oneida County well is on a 2-foot fill at the edge of a spruce swamp. Ground water was encountered at a depth of 2 $\frac{1}{2}$ feet below the general land surface. Under these conditions, the water level in the well responds quickly to small amounts of precipitation.

The precipitation records were obtained from a part-time meteorologic station about 15 miles from the well site. Records for the months of November and December were not available. The measurements indicate that the water level declined 0.40 foot as a result of the deficiency of precipitation in July, but that increased precipitation in the succeeding months restored it to a level within 0.06 foot of its stage in July.

COON CREEK AREA OF SOIL CONSERVATION SERVICE

By V. C. Fishel and C. C. Yonkers

The observation well program in the Coon Creek area^{1/} (also called La Crosse area) in Vernon, Monroe, and La Crosse Counties, Wis., was continued in 1936 by the United States Geological Survey in cooperation with the Soil Conservation Service, M. F. Schweers, project manager. Water-level measurements were made about weekly in 14 wells during the year. A water-stage recorder has been operated on well 7 from June 1934 to May 1936 and on well 9 since May 1936. Approximately 700 measurements were made during the year ending December 31, 1936.

All water-level measurements made since the beginning of the program are given in the following table, including the monthly measurements given in Water-Supply Paper 777. The measurements of 10 wells (2, 3, 4, 8, 9, 10, 11, 12, 13, and 14) are used for computing the average water levels for the entire period of record beginning June 1934. The measurements of 4 wells (1, 5, 6, and 7) are included in the following table but were not used in computing the average water levels because it is believed that these wells do not represent normal water-table conditions. Thus the average water levels given in the following table do not correspond to those given in Water-Supply Paper 777.

A severe drought culminated in this area in May 1934 and was effectively broken in June or July. The precipitation recorded at La Crosse was 3.56 inches in June, 8.27 in July, 1.90 in August, 9.04 in September, 2.38 in October, 7.01 in November, and 1.12 in December. Thus in spite of the deficiency in the first 5 months of the year, the annual precipitation was 6.92 inches above normal.

In the first 4 months of well observations, from July to October 1934, the water levels fluctuated through only a small range and showed little tendency either to rise or to fall. Doubtless a large part of the precipitation was required to supply soil moisture and the demands of vegetation during the growing season. The heavy rains in November produced a moderate rise in most wells, but there was a general decline in December, with the result that on January 1, 1935, the average of the water levels did not differ appreciably from the average at the beginning

^{1/} Water levels and artesian pressure in observation wells in the United States in 1935: U. S. Geol. Survey Water-Supply Paper 777, pp. 265-268, 1936.

of the observations. The precipitation was nearly normal in the winter of 1934-35. The water levels did not change appreciably during January and February. They rose about 0.8 foot during the first week of March and an additional 0.7 foot by March 22. They alternately rose and declined during April, and on May 5 they stood an average of about 0.5 foot higher than on March 22. They then declined 1.2 feet by June 15, rose about 0.5 foot the following week, but declined 0.5 foot by June 29. The water levels changed only slightly until after August 5, when they rose an average of about 1.4 feet during a period of several days and on August 9 reached the highest average stage during the period of record. They declined during the remainder of the year and stood an average of about 1.7 feet lower on January 1, 1936, than on August 9. There was an average net rise of about 0.4 foot during 1935.

The water levels changed only slightly during January and February 1936 but rose an average of 1.5 feet during March. Owing to light rainfall during the summer of 1936, the water levels declined an average of about 1.6 feet from April 1 to September 1. They changed very little during the rest of the year and on December 31 they stood an average of 0.04 foot lower than on January 2, 1936, 0.43 foot higher than on January 1, 1935, and 0.47 foot higher than on June 15, 1934, when the observations were started.

Wells in the Coon Creek area, in Vernon, Monroe, and

La Crosse Counties, Wis.

(The depth to the water level, given in the next to last column, is the depth below the measuring point on January 1, 1935. The height of the measuring point, given in the last column, is its height with reference to the arbitrary datum.)

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
1	Ed Clements, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 15 N., R. 5 W.	13.5	7	6.32	16.32
2	Joe Anderson, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 12, T. 14 N., R. 5 W.	20	6	18.30	28.30
3	Anton Bekkum, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 12, T. 14 N., R. 5 W.	21.7	6.5	18.16	28.16
4	Albert Storbakken, NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 14 N., R. 5 W.	20.7	4.7	14.00	24.00
5	John Bakkestuen, SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 14 N., R. 5 W.	182	6	106.25	116.25
6	Ole Olson, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 14 N., R. 5 W.	21.3	4	14.07	24.07
7	A. Michel, SW $\frac{1}{4}$ sec. 36, T. 14 N., R. 6 W.	....	48	15.06	25.06
8	C. Stylen, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26, T. 14 N., R. 7 W.	54.7	30	52.11	62.11
9	F. Lenser, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 14 N., R. 7 W.	52	48	51.00	61.00

Wells in the Coon Creek area--Continued

Well no.	Owner and location	Depth (feet)	Diameter (inches)	Depth to water level (feet)	Height of measuring point (feet)
10	Dennis Shea, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 5, T. 15 N., R. 3 W.	15.3	7	11.45	21.45
11	John Sullivan, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 16 N., R. 3 W.	11.5	6	8.77	18.77
12	Melvin Olson, SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 32, T. 16 N., R. 4 W.	32.9	6	28.79	38.79
13	W. W. Poss, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 3, T. 16 N., R. 4 W.	14	8	9.97	19.97
14	Chris Benrud, NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 14 N., R. 4 W.	25	6	6.86	16.86

Water levels in wells in the Coon Creek area, in Vernon, Monroe, and
La Crosse Counties, Wis., in feet above the arbitrary datum

Date	1	2	3	4	5	6	7	8
1934								
June 15	9.14	.....	10.09	10.02	11.65	9.76	9.85	10.17
22	8.92	.....	10.06	9.95	11.52	9.73	9.85	10.05
29	9.53	.....	10.23	9.99	11.69	9.73	9.79	10.02
July 6-7	9.89	10.04	10.48	10.10	11.89	9.75	9.85	10.08
13	9.87	9.99	10.27	10.21	10.79	9.75	9.85	10.38
20	9.72	10.05	10.45	10.12	10.71	9.74	9.86	10.64
27	10.01	10.21	10.58	10.31	10.50	9.79	9.81	10.62
Aug. 3	9.36	10.30	10.15	10.04	10.52	9.73	9.83	10.16
10-13	9.32	9.93	10.08	9.92	10.59	9.68	9.84	9.97
17-18	9.18	9.88	10.06	9.85	10.73	.....	.....	9.93
24-25	9.17	9.80	10.06	9.86	10.48	9.60	9.81	9.93
31	9.12	9.73	10.01	9.90	10.69	9.62	9.81	9.92
Sept. 7-8	9.62	9.92	10.18	10.10	10.64	9.61	9.81	9.84
14-15	9.66	9.71	10.06	10.00	10.64	9.61	9.67	9.88
21-22	9.74	9.65	10.03	10.00	10.50	9.59	9.68	9.87
28-29	10.13	9.60	10.20	10.09	10.62	9.65	9.66	9.95
Oct. 5-6	10.02	9.56	10.10	9.97	10.53	9.65	9.66	9.86
12-13	9.93	9.50	10.02	9.87	10.52	9.72	9.66	9.83
20-22	9.97	9.54	10.32	10.15	10.84	9.66	10.11	9.66
26-27	10.33	9.74	10.23	10.15	10.25	9.62	10.24	9.85
Nov. 2	10.15	9.63	10.12	10.11	10.43	9.76	10.25	9.91
9	10.53	9.50	10.17	10.16	10.30	9.77	10.24	9.71
16	10.17	9.43	10.10	10.03	10.45	9.74	10.19	9.78
23-24	13.10	9.50	10.29	10.46	10.51	9.82	10.18	9.94
30	13.43	9.58	10.48	10.61	10.75	9.98	.....	10.01
Dec. 6-8	12.69	10.62	10.26	10.56	10.35	10.11	10.12	9.70
13-15	10.69	10.59	10.17	10.22	10.44	10.12	10.06	9.95
20-21	10.32	10.36	10.11	10.14	10.30	10.10	10.05	10.15
27-28	10.10	10.12	10.04	10.06	10.25	10.05	10.01	9.91
1935								
Jan. 3-4	9.93	9.87	9.96	9.95	9.80	9.98	9.99	9.80
10-11	10.09	9.62	9.96	10.10	10.03	9.96	9.98	10.07
17-18	9.93	9.51	9.91	10.08	9.98	9.95	9.99	10.02
24-25	9.83	9.44	9.87	10.01	10.30	9.94	9.98	9.87
31-Feb. 1	9.80	9.32	9.84	9.93	10.18	9.90	9.97	9.87
Feb. 7-8	9.68	9.26	9.84	9.97	10.22	9.88	9.97	10.01
14-15	9.73	9.19	9.82	10.00	9.92	9.87	9.98	10.38
21-23	9.87	9.12	9.79	10.02	10.12	9.87	9.98	9.90
28-Mar. 1	9.87	9.09	9.81	10.01	9.98	9.92	9.99	10.00
Mar. 7-8	9.68	9.82	10.02	10.76	9.92	10.20	10.06	9.92
14-15	9.73	10.50	10.09	10.97	10.10	18.62	10.07	10.32
21-	13.15	13.30	10.34	11.98	12.51	19.19	10.28	10.21
28-29	12.84	14.86	10.41	11.44	9.97	19.68	10.15	10.26
Apr. 4-5	12.52	14.15	10.23	10.84	10.06	19.09	10.11	10.23
12-13	13.17	13.83	10.16	10.82	9.95	19.48	10.09	10.30
18-19	12.31	13.57	10.09	10.55	9.91	19.17	10.09	10.24
25-26	12.17	13.35	10.15	10.34	10.08	18.99	10.07	10.26

Water levels in wells in the Coon Creek area, in Vernon, Monroe, and
La Crosse Counties, Wis., in feet above the arbitrary datum

Date	1	2	3	4	5	6	7	8
1935								
May 2-6	13.02	14.51	10.77	10.58	10.10	19.69	.....	10.22
9-10	13.50	14.95	10.43	10.83	9.89	20.12	10.10	10.37
16-19	12.26	14.95	10.28	10.63	9.95	20.02	10.06	10.27
23-24	11.40	14.63	10.23	10.44	9.85	19.70	10.05	10.32
31-June 1	11.73	14.53	10.25	10.50	9.79	19.62	10.05	10.34
June 6-7	11.34	14.40	10.19	10.40	9.83	18.93	10.05	10.33
13-14	10.50	14.14	10.14	10.26	9.96	18.53	10.07	10.46
20-21	12.04	13.87	10.36	10.57	9.83	19.47	10.09	10.47
27-28	11.50	13.77	10.29	10.38	9.78	18.95	10.08	10.39
July 6-8	10.84	14.53	10.65	10.44	10.03	19.18	10.09	10.50
11-12	10.27	14.68	10.50	10.33	9.81	18.77	10.08	10.43
18-19	9.76	14.30	.....	10.08	9.90	16.34	10.08	10.30
25-26	9.54	13.99	.....	10.31	9.96	12.27	10.12	10.31
Aug. 1	9.72	13.99	.....	10.28	9.95	19.48	10.30	10.58
8-9	11.79	17.90	.....	11.70	9.95	20.09	10.31	10.60
15-16	9.95	17.33	.....	10.96	9.88	19.39	10.29	10.50
22-23	9.58	16.77	.....	10.31	9.83	18.69	10.28	10.33
29-30	9.20	16.19	.....	10.30	9.79	18.28	10.27	10.39
Sept. 5-6	9.16	15.91	.....	10.09	9.83	14.99	10.27	10.43
12-13	9.07	15.79	.....	10.05	9.92	15.65	10.26	10.45
19-20	8.97	15.13	10.14	10.14	10.12	12.25	10.29	10.41
26-27	8.97	15.07	10.09	10.01	10.00	12.35	10.26	10.26
Oct. 3-4	9.08	14.69	10.09	9.95	9.92	11.98	10.25	10.43
10-11	9.27	14.73	10.06	9.97	10.05	11.74	10.24	10.39
17-18	9.36	14.80	10.10	10.12	10.03	11.57	10.23	10.34
23-25	8.45	14.74	9.84	9.98	10.01	11.43	10.21	10.19
31-Nov. 1	9.47	14.92	10.07	10.20	9.88	11.77	10.21	10.41
Nov. 8-9	9.82	14.94	10.05	10.10	10.17	11.82	10.22	10.49
14-16	9.69	14.67	10.06	9.99	10.06	11.27	10.21	10.24
21-22	9.69	14.09	10.02	9.97	9.76	11.17	10.19	10.45
28-29	9.89	13.87	10.13	10.15	9.88	11.12	10.18	10.71
Dec. 6-7	9.57	13.78	9.99	10.09	9.83	11.04	10.12	10.41
12-13	9.56	13.63	9.96	9.99	9.74	10.97	10.11	10.52
19-20	9.43	13.58	9.91	9.95	9.71	10.95	10.06	10.35
26-27	9.27	13.56	9.87	9.93	9.69	10.90	9.99	10.24
1936								
Jan. 2-3	9.22	13.50	9.88	9.90	9.82	10.87	9.97	10.81
9-10	9.20	13.16	9.91	9.89	9.80	10.81	9.96	10.63
16-17	9.18	12.99	9.89	9.90	9.84	10.76	9.96	10.36
23-25	9.12	12.95	9.86	9.79	9.85	10.70	9.96	10.58
30-31	9.05	12.92	9.82	9.76	9.89	10.65	9.97	10.64
Feb. 6-7	9.02	12.94	9.90	9.74	10.05	10.63	9.97	10.41
13-14	9.01	13.00	9.97	9.72	10.08	10.61	9.98	10.82
20-21	8.99	12.99	9.99	9.73	10.10	10.59	9.98	10.56
27-28	9.15	13.04	10.04	9.90	9.16	10.57	9.96	10.65
Mar. 5-6	9.29	13.21	10.05	10.05	9.97	11.52	9.97	10.58
12-13	10.92	13.34	10.13	10.84	10.05	11.21	10.01	12.13
19-21	11.70	16.17	10.35	11.37	11.06	18.79	10.08	10.95
26-27	12.22	17.50	12.12	12.13	.....	19.57	10.30	11.08
Apr. 2-3	11.30	17.46	11.64	11.26	11.07	19.57	10.12	10.81
9-10	11.23	17.70	11.29	11.07	10.08	19.52	10.15	10.83
16-17	11.32	17.67	10.65	10.58	10.03	19.62	10.12	10.70
23-25	10.32	17.39	10.17	10.30	9.93	19.28	10.10	10.61
30-May 1	10.12	16.99	10.40	10.47	10.55	19.27	10.10	10.82
May 7-8	11.02	16.99	10.47	10.40	9.85	19.60	10.11	10.95
14-15	10.50	16.94	10.35	10.29	9.78	19.29	10.11	10.70
21-22	9.88	16.74	10.32	10.24	9.86	18.85	10.10	10.65
28-29	9.68	16.56	10.24	10.18	9.97	18.67	10.08	10.79
June 4-5	9.60	16.31	10.17	10.15	10.05	18.30	.....	10.58
11-12	9.57	16.23	10.14	10.10	10.07	15.09	.....	10.57
18-19	9.21	15.86	10.16	10.07	10.10	13.12	.....	10.75
25-28	8.97	15.40	10.10	9.95	10.08	12.23	.....	10.83
July 2-3	8.92	15.13	10.11	9.90	10.03	11.73	10.18	10.55
9-11	8.76	14.80	10.07	9.82	10.01	11.38	10.14	10.59
16-17	(a)	14.64	10.05	9.74	10.02	11.17	10.19	10.49
23-24	(a)	14.48	10.07	9.73	10.00	11.06	10.24	10.53
30-31	(a)	14.20	10.04	9.69	9.81	10.92	10.22	10.13

a Dry.

Water levels in wells in the Coon Creek area, in Vernon, Monroe, and
La Crosse Counties, Wis., in feet above the arbitrary datum

Date	1	2	3	4	5	6	7	8
1936								
Aug. 6-7	(a)	14.11	10.02	9.67	9.73	10.87	10.21	10.32
13-14	(a)	13.99	10.00	9.68	9.60	10.74	10.28	10.34
20-21	(a)	13.94	9.99	9.79	9.52	10.78	10.29	10.29
27-28	(a)	13.74	10.02	9.79	9.30	10.74	10.31	10.31
Sept. 3-4	8.93	13.79	10.03	9.78	9.05	10.80	10.28	10.22
10-11	9.59	13.67	9.98	9.83	9.22	10.95	10.29	10.39
17-18	11.02	13.68	10.04	10.02	9.11	11.25	10.26	10.14
24-25	9.50	13.53	10.01	9.80	8.83	11.17	10.22	10.31
Oct. 1-2	9.32	13.47	9.84	9.76	8.77	11.10	10.17	10.22
8-9	9.40	13.41	9.97	9.84	8.79	11.05	10.18	10.35
15-16	9.42	13.52	9.98	9.82	8.59	10.97	10.16	10.33
22-23	9.46	13.12	9.95	9.88	8.43	10.92	10.15	10.00
29-30	9.49	13.12	9.96	9.83	8.31	10.85	10.17	10.38
Nov. 5-6	9.58	12.99	10.05	9.89	8.06	10.86	10.16	10.13
12-13	9.90	13.02	10.00	9.90	7.86	10.66	10.14	10.36
19-20	9.69	13.10	10.00	9.87	8.17	10.59	10.09	10.46
25-27	9.59	12.90	9.97	9.85	7.72	10.53	10.08	10.31
Dec. 3-4	9.46	12.80	9.92	9.83	7.93	10.45	10.05	10.34
10-11	9.41	12.69	9.89	9.83	7.85	10.38	10.04	10.29
17-18	9.37	12.60	9.88	9.84	7.93	10.33	10.03	10.33
24-25	9.34	12.55	9.89	9.82	8.15	10.30	10.04	10.42
31	10.94	12.74	10.34	10.15	7.99	11.49	10.01	10.61

Date	9	10	11	12	13	14	Average
1934							
June 15	10.41	9.77	.....	10.01	9.25	.....	9.96
22	10.38	9.74	.....	10.02	9.23	.....	9.92
29	10.34	9.77	.....	10.02	9.45	.....	9.97
July 6-7	10.32	9.99	.....	10.07	10.14	.....	10.15
13	10.29	10.03	.....	10.07	9.70	.....	10.12
20	10.20	10.05	.....	10.04	9.75	.....	10.16
27	10.23	9.99	.....	10.02	9.80	.....	10.22
Aug. 3	10.23	9.83	.....	9.98	9.39	.....	10.01
10-13	10.22	9.74	.....	9.97	9.32	.....	9.89
17-18	10.23	9.74	.....	9.98	9.29	.....	9.87
24-25	10.21	9.68	.....	9.97	9.27	.....	9.85
31	10.28	9.67	.....	9.98	9.28	.....	9.85
Sept. 7-8	10.18	9.90	.....	9.99	9.49	.....	9.95
14-15	10.25	9.92	.....	10.00	9.44	.....	9.91
21-22	10.17	9.98	.....	9.99	9.48	.....	9.89
28-29	10.16	9.88	.....	10.04	9.64	.....	9.94
Oct. 5-6	10.14	9.89	.....	10.01	9.44	.....	9.87
12-13	10.17	9.86	.....	10.00	9.46	.....	9.84
19-21	10.12	10.03	.....	10.05	9.72	.....	9.95
26-27	10.09	9.99	.....	9.99	9.67	.....	9.96
Nov. 2	10.10	10.00	.....	9.94	9.59	.....	9.92
9	10.12	10.07	.....	9.98	9.67	.....	9.92
16	10.10	10.00	.....	9.99	9.61	.....	9.88
23-24	10.12	10.31	.....	10.09	10.30	.....	10.12
30-Dec. 1	10.16	10.58	.....	10.16	10.45	.....	10.25
Dec. 6-10	10.05	10.48	12.33	10.07	10.32	.....	10.48
13-15	10.00	10.26	10.88	10.05	10.07	.....	10.24
20-21	10.02	10.25	10.48	10.07	10.06	.....	10.17
27-28	10.01	10.14	10.12	10.03	10.05	.....	10.05
1935							
Jan. 3-4	9.98	9.93	9.94	9.98	9.96	.....	9.93
10-11	10.00	10.44	10.61	9.99	10.10	.....	10.10
17-18	10.00	10.09	9.95	9.97	9.94	.....	9.94
24-25	9.99	10.03	9.83	9.94	10.05	.....	9.89
31-Feb. 1	10.00	9.97	9.63	9.90	9.96	.....	9.82
Feb. 7-8	9.91	9.96	9.60	9.95	9.83	.....	9.81
14-15	9.89	10.43	9.50	9.95	9.80	.....	9.88

a Dry.

Water levels in wells in the Coon Creek area, in Vernon, Monroe, and
La Crosse Counties, Wis., in feet above the arbitrary datum

Date	9	10	11	12	13	14	Average
1935							
Feb. 20-23	9.89	10.27	9.66	9.93	9.81	.....	9.82
28-Mar. 1	9.93	10.08	9.61	9.95	9.80	.....	9.81
Mar. 7-8	9.89	11.13	13.25	10.54	10.94	10.21	10.64
14-15	9.89	10.73	12.57	10.36	10.39	11.26	10.70
21-22	9.91	11.78	13.17	10.71	11.27	10.69	11.33
28-29	9.88	11.58	12.02	10.38	10.82	10.00	11.16
Apr. 4-5	9.93	10.98	10.83	10.29	10.57	9.76	10.78
12-13	10.02	14.09	13.95	10.20	10.82	10.54	11.47
18-19	10.06	11.53	11.18	10.21	10.42	9.70	10.75
25-26	10.08	11.44	11.07	10.15	10.43	9.64	10.69
May 2-6	10.12	17.57	13.37	10.37	10.74	10.37	11.86
9-10	10.17	16.96	11.97	10.23	10.57	9.83	11.63
16-19	10.17	16.05	11.85	10.34	10.69	9.66	11.48
23-24	10.19	12.67	10.69	10.20	10.40	9.48	10.92
31-June 1	10.20	11.39	10.81	10.24	10.42	9.46	10.81
June 6-7	10.21	11.50	10.57	10.21	10.32	9.40	10.75
13-17	10.27	10.79	10.35	10.19	10.17	9.36	10.61
20-21	10.30	12.47	13.09	10.30	10.72	9.63	11.17
27-28	10.33	11.02	10.68	10.23	10.25	9.43	10.67
July 6-8	10.46	11.10	10.68	10.36	10.53	9.81	10.90
11-12	10.44	10.93	10.57	10.26	10.34	9.22	10.77
18-19	10.50	10.60	10.23	10.21	10.15	9.38	10.64
25-26	10.55	10.42	10.15	10.29	10.46	9.25	10.64
Aug. 1-5	10.62	10.45	10.17	10.24	10.22	10.06	10.74
8-9	10.66	12.60	12.80	10.67	12.63	9.56	12.12
15-16	10.64	10.93	10.77	10.40	11.27	9.76	11.39
22-23	10.66	10.92	12.24	10.46	11.37	9.65	11.41
29-30	10.71	10.71	10.66	10.31	10.96	9.60	11.09
Sept. 5-6	10.74	10.63	10.49	10.31	10.75	9.54	10.99
12-13	10.75	10.56	10.42	10.22	10.62	9.55	10.93
19-20	10.77	10.53	10.30	10.18	10.47	9.64	10.77
26-27	10.84	10.50	10.47	10.29	10.49	9.56	10.75
Oct. 3-4	10.81	10.50	10.25	10.20	10.32	9.53	10.67
10-11	10.62	10.36	10.19	10.12	10.28	9.47	10.61
17-18	10.57	10.44	10.20	10.33	10.52	9.61	10.70
23-25	10.44	10.42	10.18	10.27	10.17	9.54	10.58
31-Nov. 1	10.46	10.44	10.29	10.45	10.23	9.72	10.71
Nov. 8-9	10.54	10.58	10.31	10.32	10.12	9.69	10.71
14-16	10.43	10.49	10.27	10.28	10.01	9.57	10.60
21-22	10.42	10.47	10.27	10.26	10.00	9.56	10.55
28-29	10.51	10.55	10.44	10.27	10.17	9.81	10.66
Dec. 6-7	10.45	10.50	10.31	10.21	9.91	9.83	10.54
12-13	10.41	10.54	10.37	10.20	9.94	9.77	10.53
19-20	10.39	10.52	10.32	10.17	9.87	9.73	10.47
26-27	10.39	10.40	10.08	10.14	9.77	9.57	10.39
1936							
Jan. 2-3	10.38	10.41	10.08	10.27	9.87	9.62	10.47
9-10	10.36	10.41	10.07	10.25	9.74	9.53	10.39
16-17	10.30	10.40	10.04	10.22	9.71	9.52	10.33
23-24	10.30	10.35	9.97	10.21	9.66	9.51	10.29
30-31	10.35	10.35	9.95	10.18	9.84	9.50	10.33
Feb. 6-7	10.36	10.29	9.93	10.16	9.84	9.81	10.33
13-14	10.41	10.29	9.80	10.14	9.82	9.86	10.38
20-21	10.39	10.28	9.80	10.18	9.84	9.86	10.36
27-28	10.43	10.37	10.25	10.19	9.79	9.69	10.43
Mar. 5-6	10.19	10.38	10.29	10.21	9.76	9.68	10.44
12-13	10.10	12.32	11.26	10.47	11.42	10.85	11.28
19-21	10.15	10.79	11.42	10.62	11.41	10.96	11.41
26-27	10.38	10.95	12.58	10.76	11.16	10.69	11.93
Apr. 2-3	10.44	10.84	11.38	10.65	10.60	9.94	11.50
9-10	10.57	10.81	10.97	10.43	10.57	9.89	11.41
16-17	10.79	10.94	10.97	10.40	10.31	9.77	11.27
23-25	10.96	10.79	10.67	10.39	10.12	9.66	11.10
30-May 1	11.18	10.75	10.57	10.38	10.05	9.56	11.11
May 7-8	11.16	11.14	10.61	10.42	10.10	9.75	11.19
14-15	11.14	10.81	10.53	10.37	9.97	9.61	11.07
21-22	10.85	10.67	10.42	10.36	9.88	9.58	10.97
28-29	10.82	10.64	10.36	10.37	9.75	9.52	10.90

Water levels in wells in the Coon Creek area, in Vernon, Monroe, and

La Crosse Counties, Wis.--Continued

Date	9	10	11	12	13	14	Average
1936							
June 4-5	10.78	10.55	10.33	10.35	9.88	9.44	10.85
11-12	10.75	10.50	10.22	10.32	9.79	9.43	10.80
18-19	10.74	10.43	10.27	10.35	9.95	9.43	10.80
25-28	10.74	10.34	10.16	10.27	9.67	9.40	10.68
July 2-3	10.70	10.23	.....	10.27	9.65	9.36	10.66
9-11	10.69	10.13	10.04	10.26	9.57	9.30	10.52
16-17	10.68	10.00	9.84	10.30	9.51	9.24	10.44
23-24	10.66	9.93	9.77	10.35	9.49	9.23	10.42
30-31	10.62	9.80	9.79	10.33	9.46	9.18	10.32
Aug. 6-7	10.62	9.72	9.62	10.32	9.43	9.16	10.29
13-14	10.63	9.66	9.60	10.33	9.38	9.19	10.28
20-21	10.62	9.60	9.58	10.33	9.36	9.21	10.27
27-28	10.61	9.67	9.66	10.35	9.39	9.30	10.28
Sept. 3-4	10.55	9.78	9.73	10.34	9.43	9.27	10.29
10-11	10.57	9.84	9.77	10.36	9.49	9.32	10.31
17-18	10.50	9.97	9.87	10.37	9.97	9.48	10.40
24-25	10.50	10.01	9.92	10.35	9.49	9.36	10.32
Oct. 1-2	10.48	9.98	9.91	10.32	9.39	9.32	10.27
8-9	10.50	10.00	9.92	10.34	9.41	9.40	10.31
15-16	10.49	9.98	9.90	10.33	9.39	9.37	10.29
22-23	10.45	9.99	9.99	10.27	9.49	9.37	10.25
29-30	10.48	10.04	9.94	10.22	9.40	9.41	10.27
Nov. 5-6	10.47	10.12	10.13	10.30	9.58	9.50	10.31
12-13	10.49	10.15	10.08	10.31	9.46	9.42	10.32
19-20	10.53	10.10	10.00	10.30	9.41	9.42	10.32
25-27	10.48	10.14	10.02	10.30	9.42	9.42	10.28
Dec. 3-4	10.46	10.00	9.96	10.32	9.39	9.40	10.24
10-11	10.45	10.06	9.93	10.29	9.37	9.42	10.22
17-18	10.44	10.06	9.90	10.27	9.37	9.44	10.21
24-25	10.45	10.05	9.89	10.29	9.35	9.39	10.21
31	10.39	10.18	10.10	10.32	9.87	9.69	10.43



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